

Fig.1

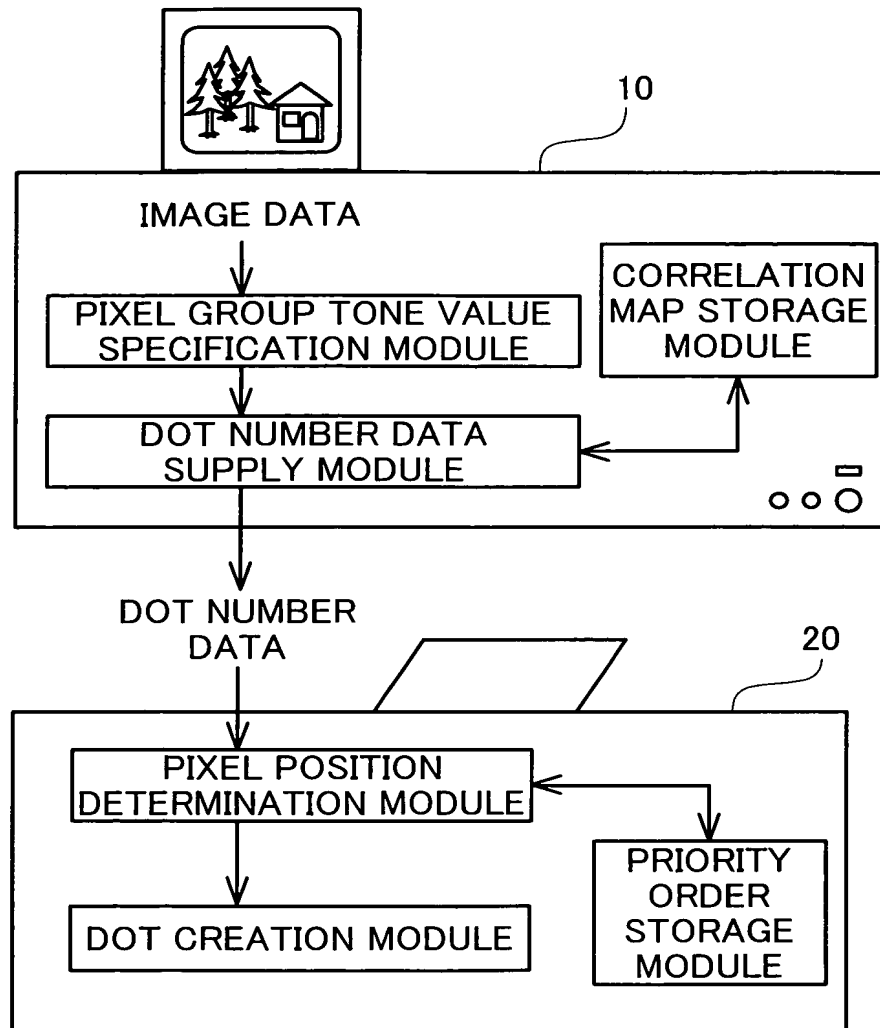


Fig.2

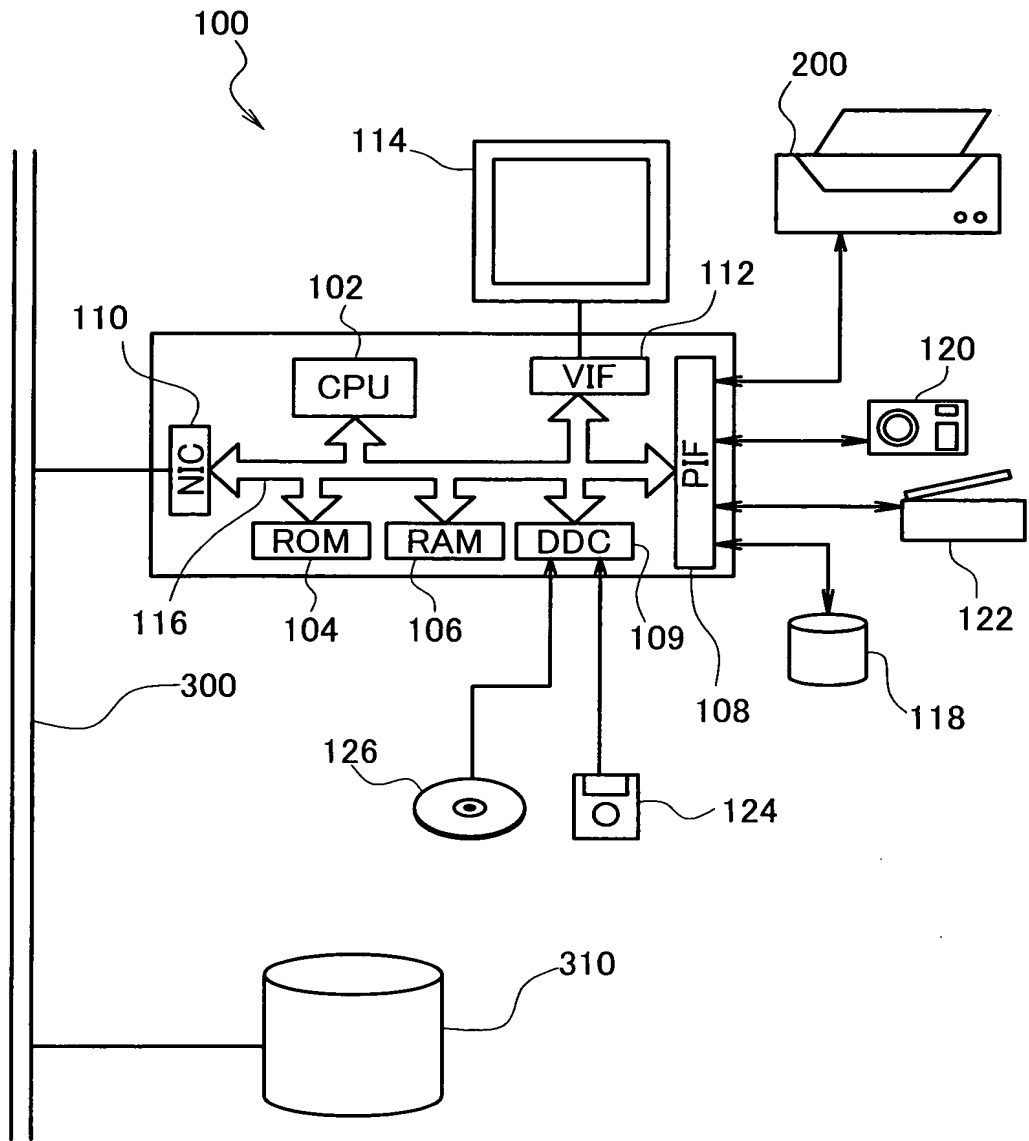


Fig.3

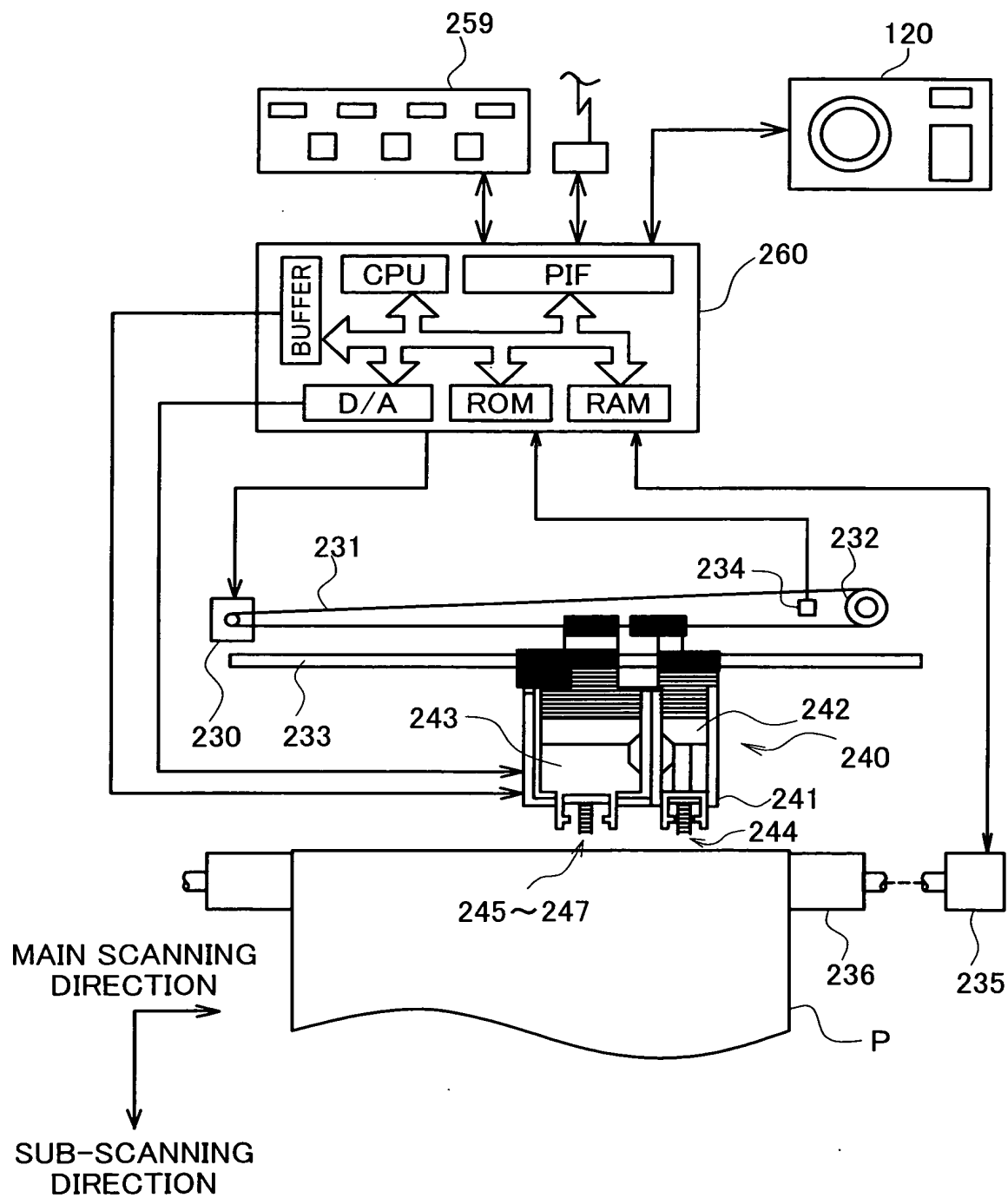


Fig.4

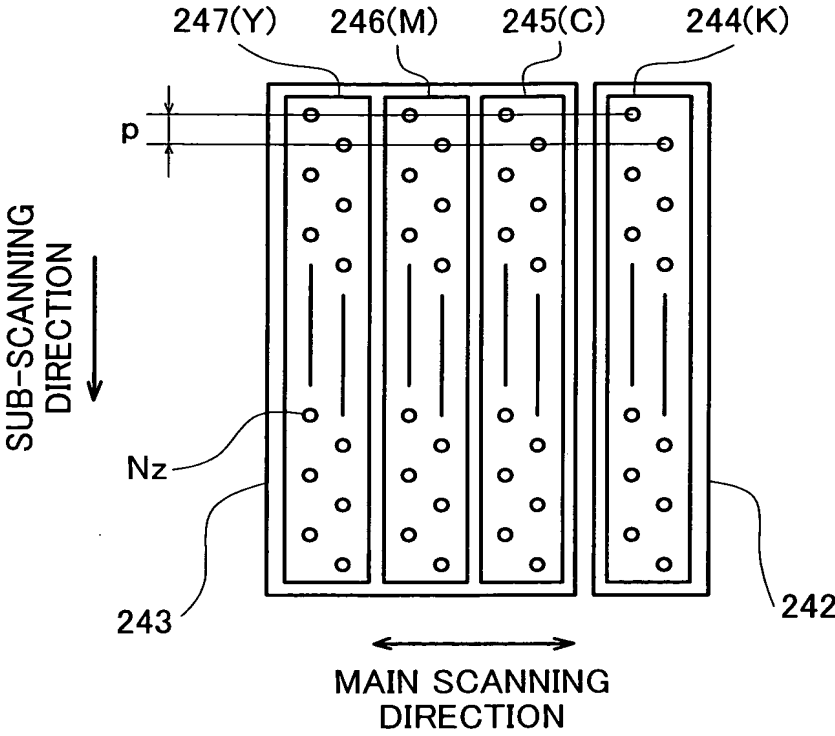
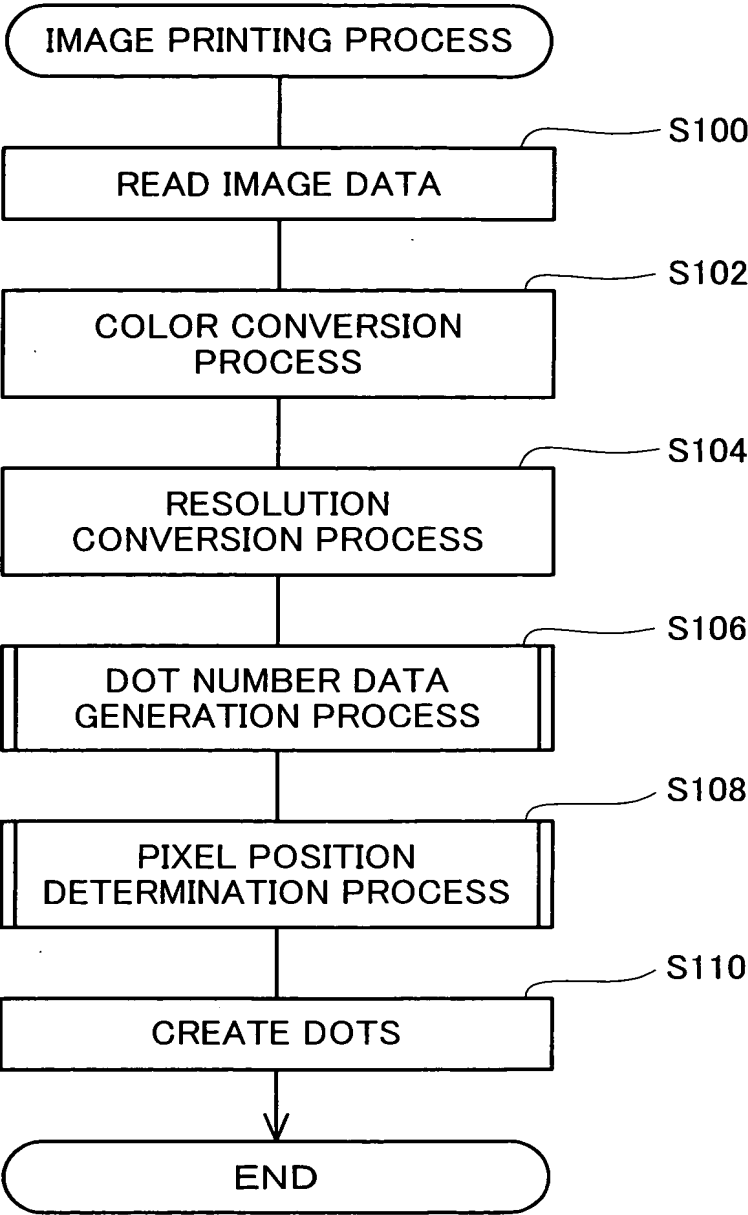


Fig.5



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Fig.7

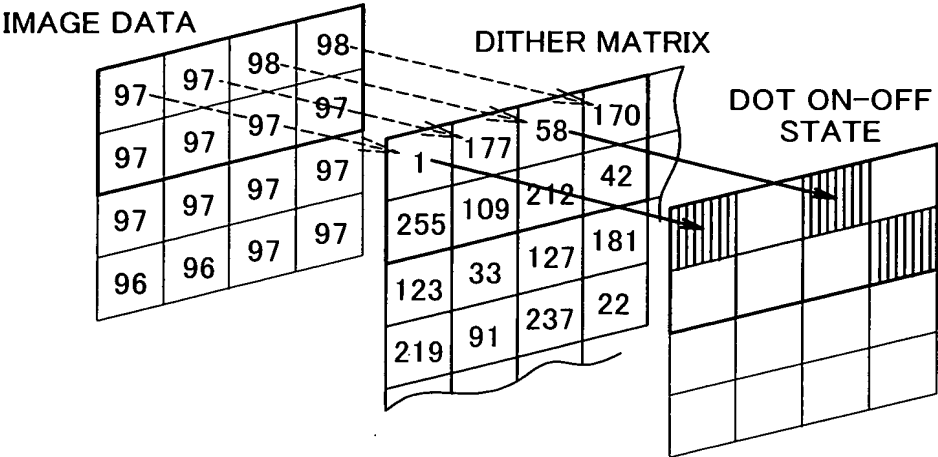


Fig.8a

97	97	98	98	98	98	98	98
97	97	97	97	97	97	98	98
97	97	97	97	97	97	97	97
96	96	97	97	97	97	97	97

Fig.8b

1	177	58	170	70	186	79	161
255	109	212	42	242	5	223	48
123	33	127	181	83	155	105	140
219	91	237	22	121	198	61	188

Fig.8c

Fig.8d

3	4
3	2

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Fig.9a

3	4
3	2

Fig.9b

1	177	58	170	70	186	79	161
255	109	212	42	242	5	223	48
123	33	127	181	83	155	105	140
219	91	237	22	121	198	61	188

Fig.9c

Fig.9d

1	6	3	5	3	6	4	5
8	4	7	2	8	1	7	2
4	2	5	6	2	6	3	5
7	3	8	1	4	8	1	7

Fig.10

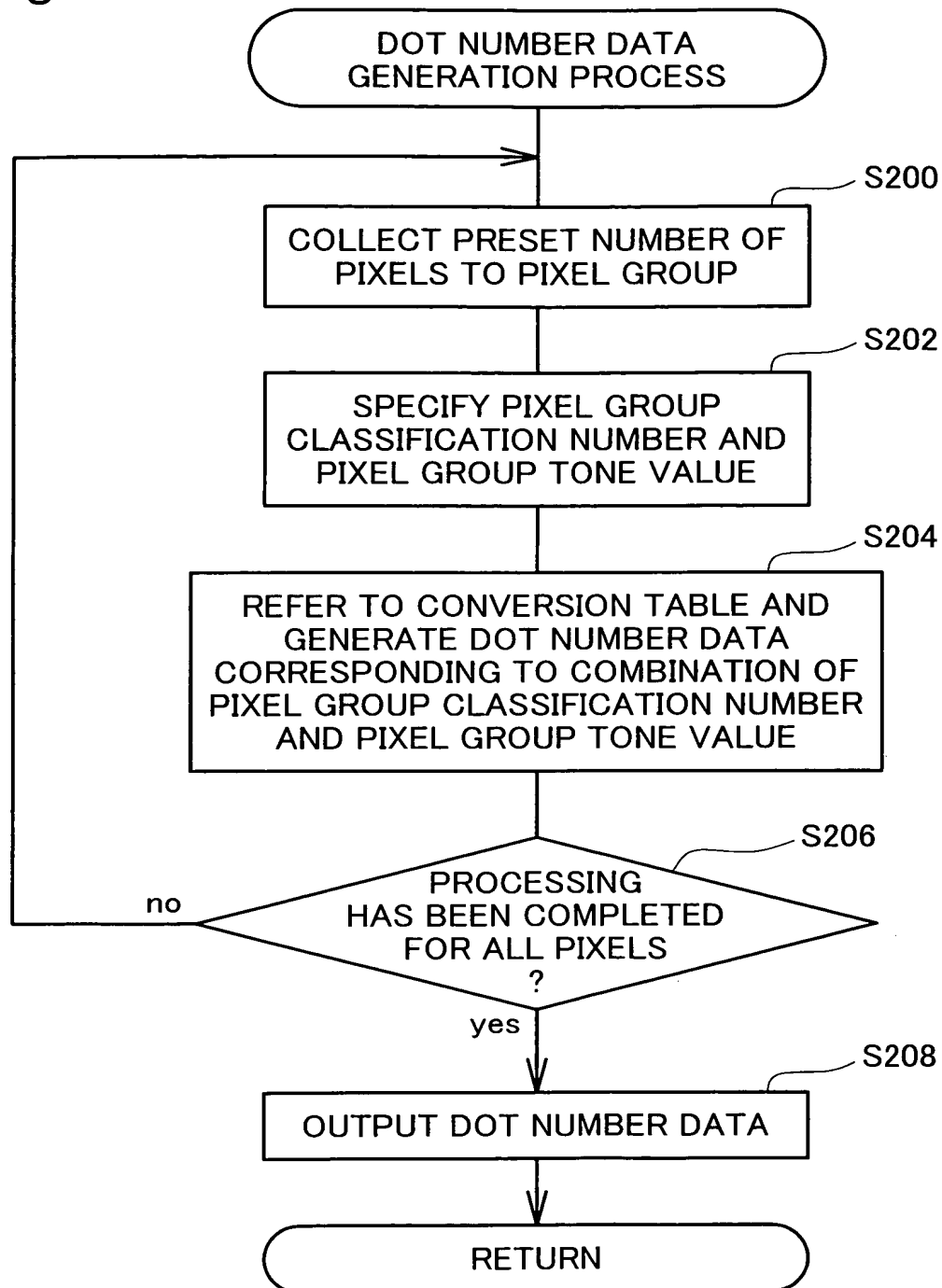


Fig.11a

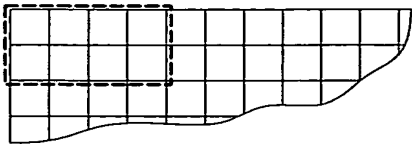


Fig.11b

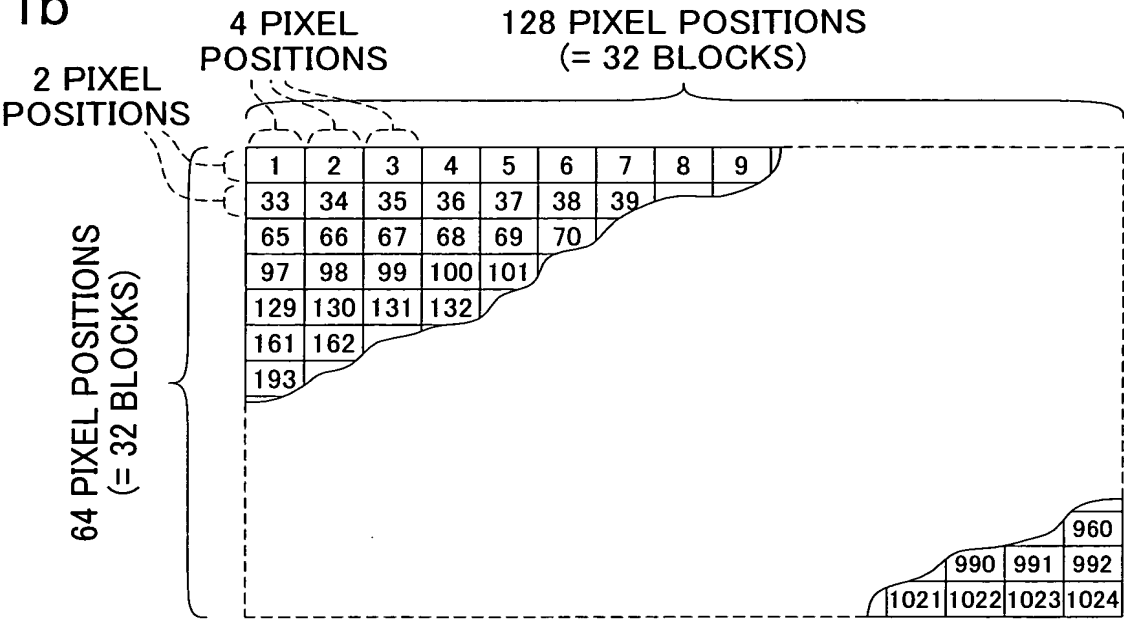
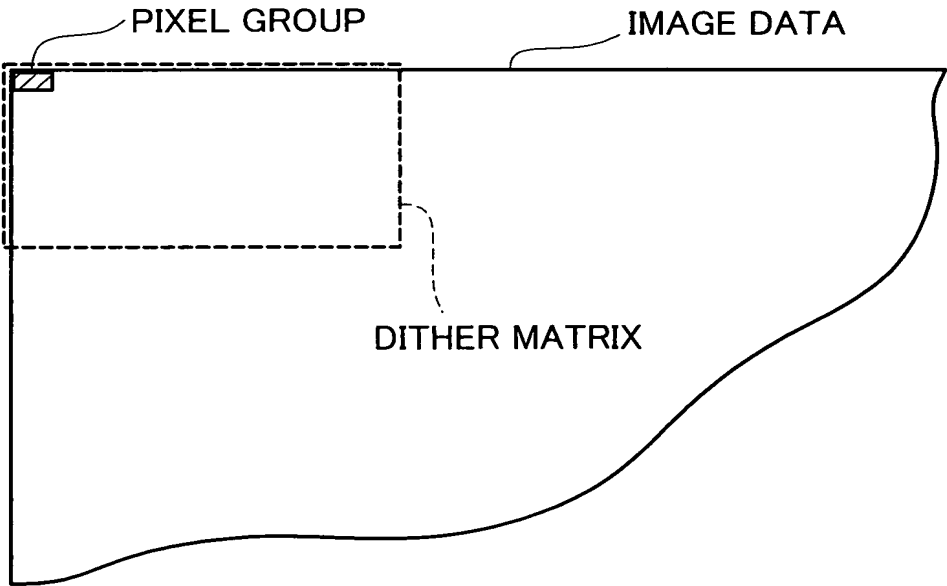


Fig.11c



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Fig.12a

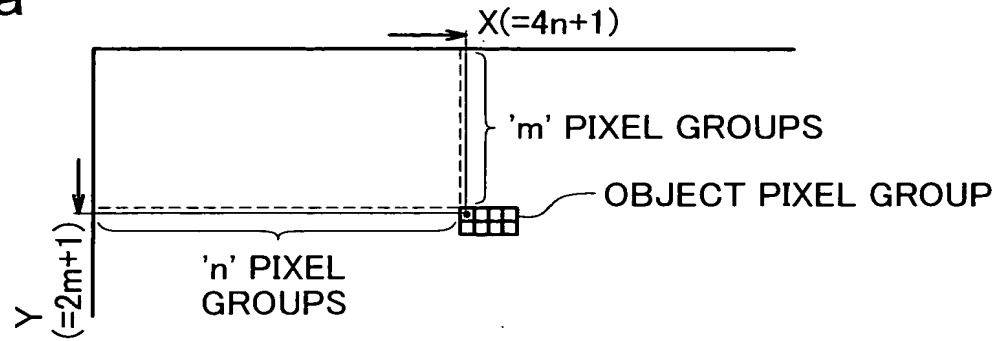


Fig.12b

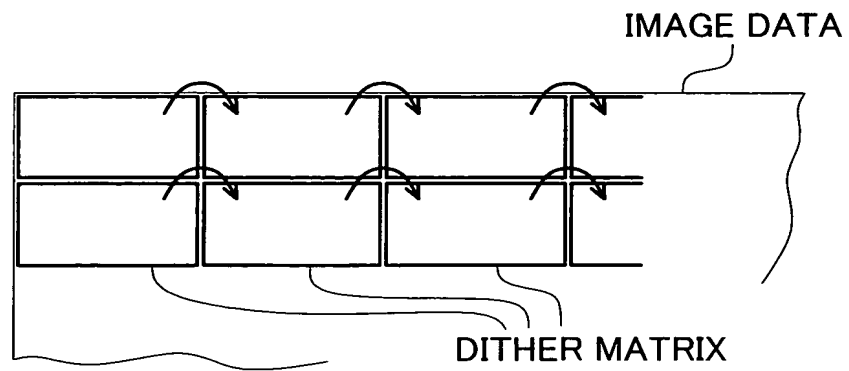


Fig.12c

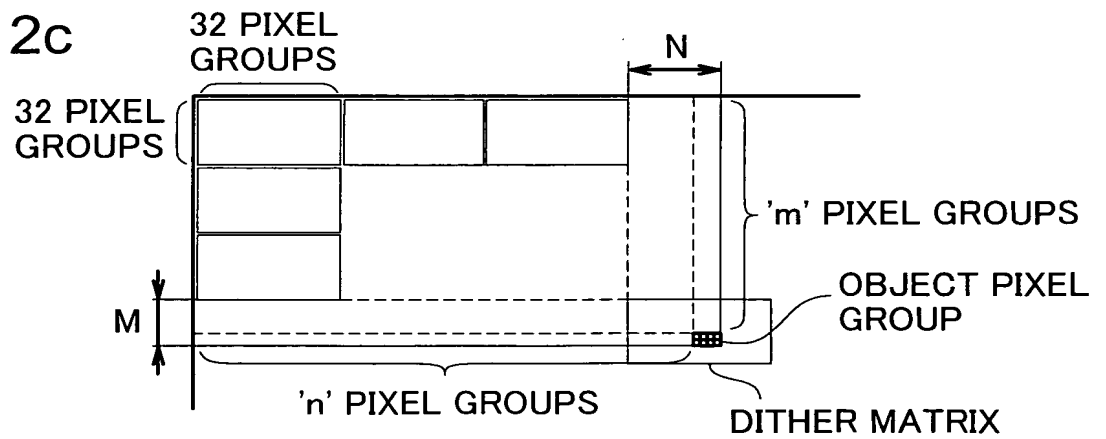


Fig.12d

$$\begin{cases} N = n - \text{int}(n/32) \times 32 + 1 \\ M = m - \text{int}(m/32) \times 32 + 1 \end{cases}$$

Fig.13

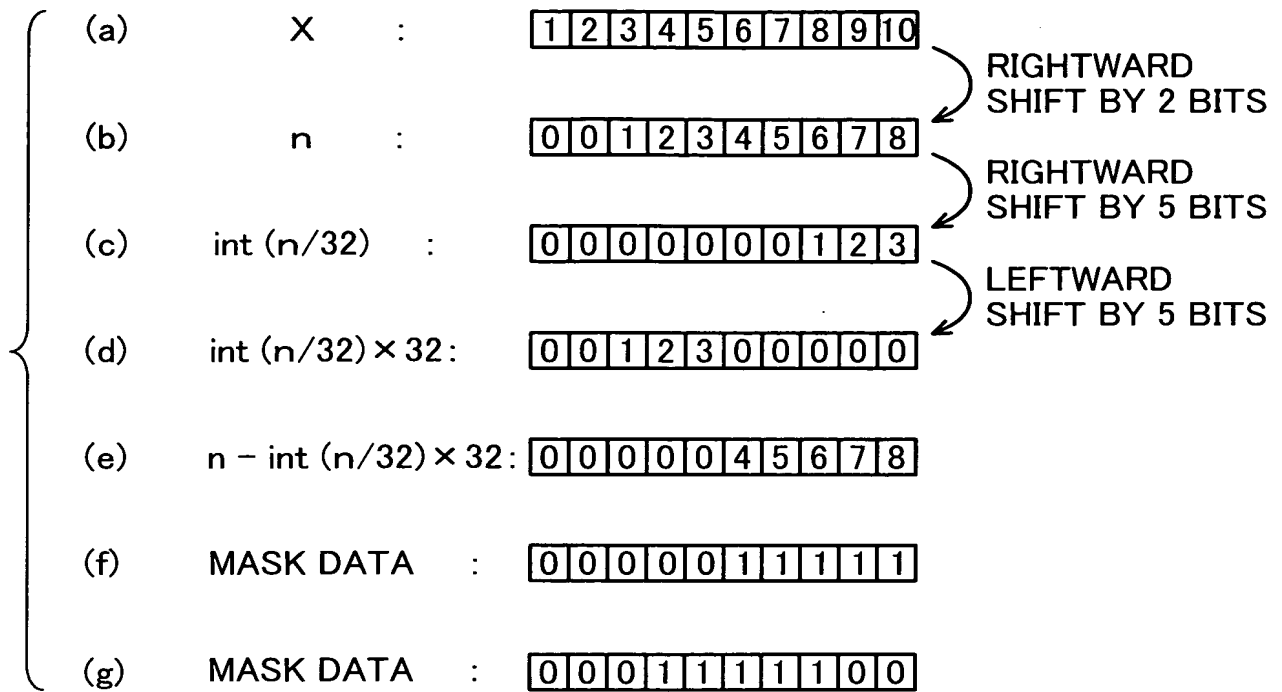


Fig.14

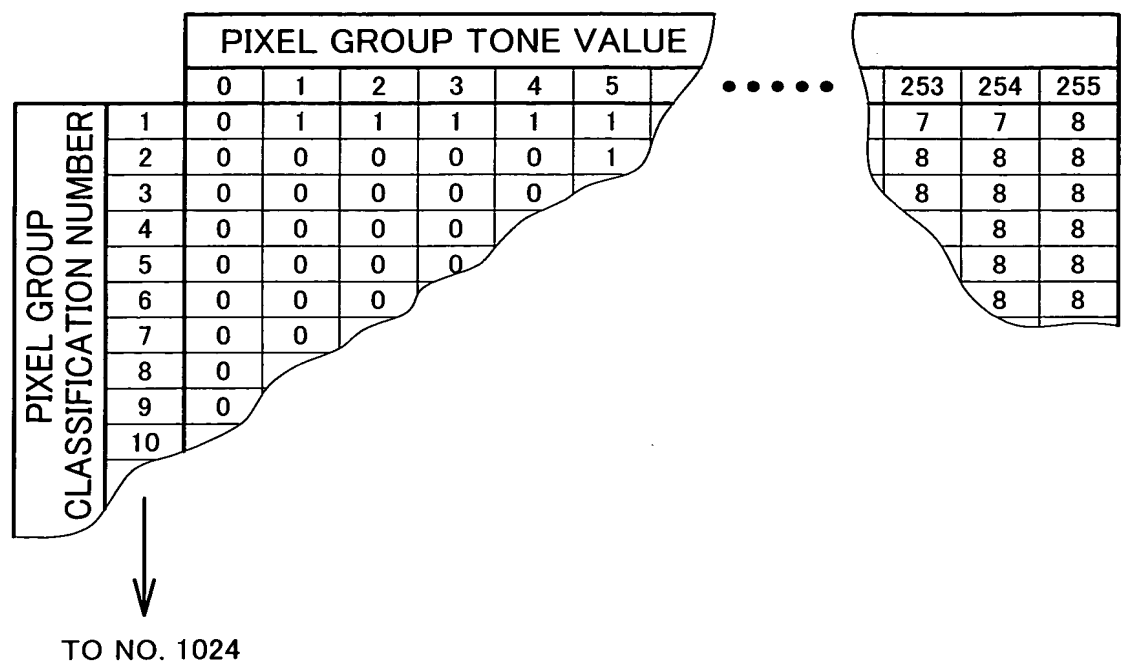


Fig.15

(a) BLOCK 1

1	177	58	170
255	109	212	42

(b) PIXEL GROUP
TONE VALUE : 0

DOT NUMBER DATA : 0

(c) PIXEL GROUP
TONE VALUE : 1

●			

DOT NUMBER DATA : 1

(d) PIXEL GROUP
TONE VALUE : 2

●			

DOT NUMBER DATA : 1

(e) PIXEL GROUP
TONE VALUE : 100

●		●	
			●

DOT NUMBER DATA : 3

(f) PIXEL GROUP
TONE VALUE : 200

●	●	●	●
	●		●

DOT NUMBER DATA : 6

(g) PIXEL GROUP
TONE VALUE : 255

●	●	●	●
●	●	●	●

DOT NUMBER DATA : 8

Fig.16

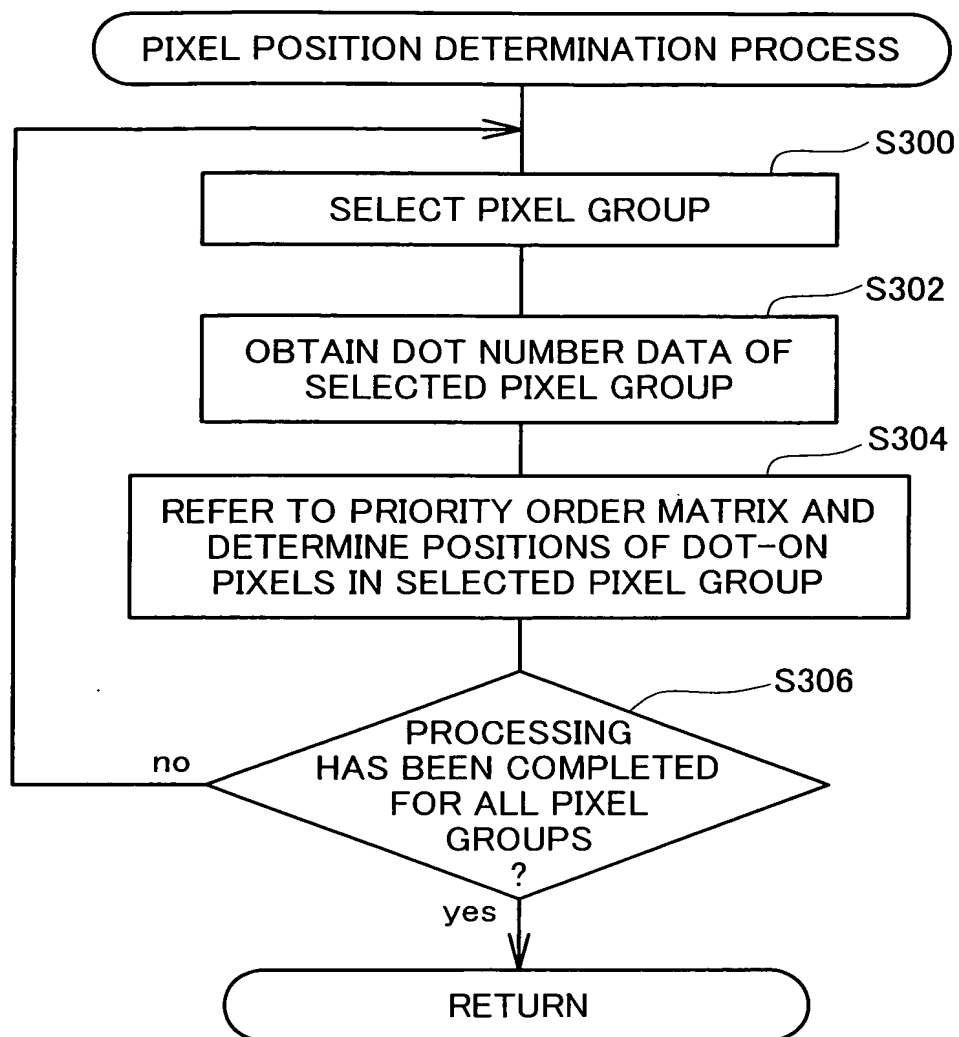
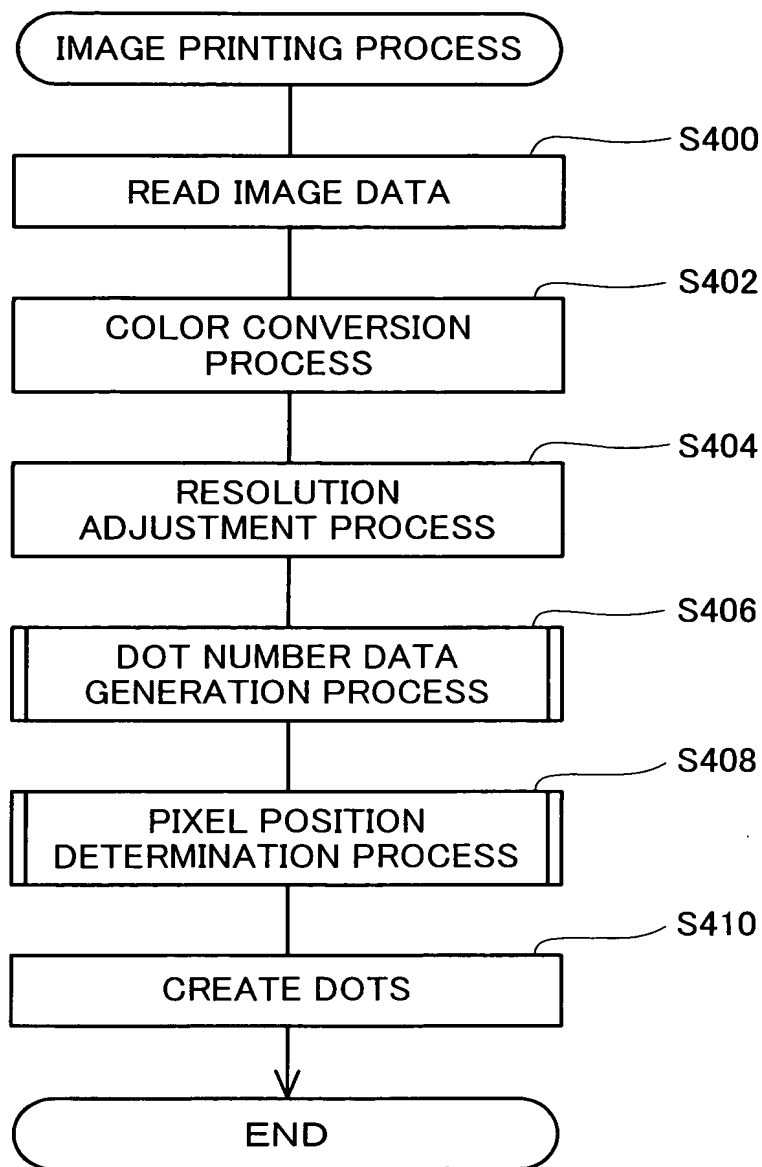


Fig.17

SIZE OF DITHER MATRIX (PIXELS)		SIZE OF PIXEL GROUP (PIXELS)		BLOCK NUMBER	DATA VOLUME OF CONVERSION TABLE (BYTES)	NUMBER OF STATES / PIXEL GROUP	NUMBER OF USED BITS
MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION	MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION				
64	64	2	2	1024	256K	5	3
		4	2	512	128K	9	4
		4	4	256	64K	17	5
128	64	2	2	2048	512K	5	3
		4	2	1024	256K	9	4
		4	4	512	128K	17	5
128	128	2	2	4096	1024K	5	3
		4	2	2048	512K	9	4
		4	4	1024	256K	17	5

Fig.18



97	98	98	98	
97	97	97	98	
96	97	97	97	

97	98	98	
97	97	98	
96	97	97	

97	97	97	97	98	98	98	98	98	98	98	98
97	97	97	97	98	98	98	98	98	98	98	98
97	97	97	97	97	97	97	97	98	98	98	98
97	97	97	97	97	97	97	97	98	98	98	98
96	96	96	96	97	97	97	97	97	97	97	97
96	96	96	96	97	97	97	97	97	97	97	97

Fig.20

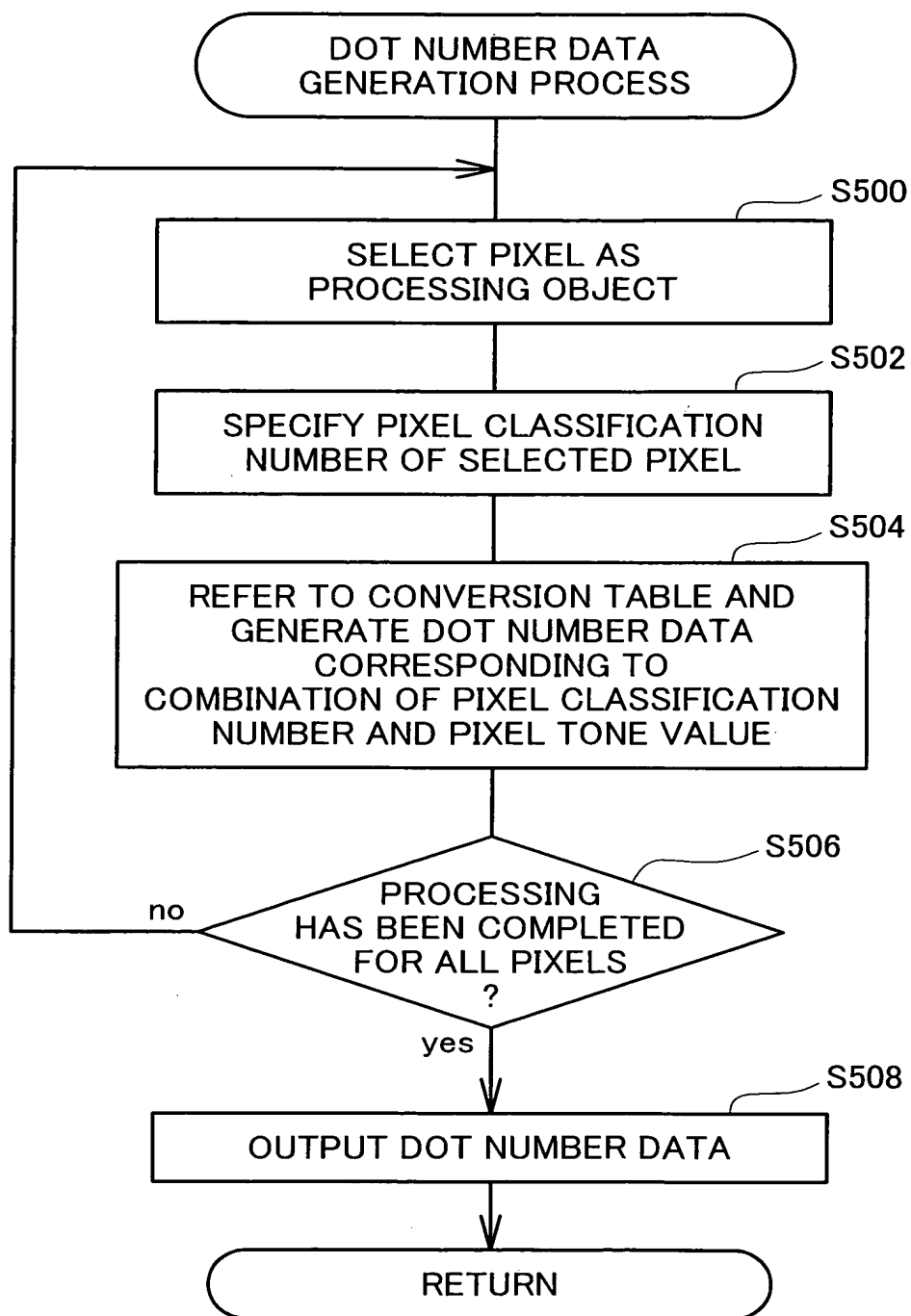


Fig.21

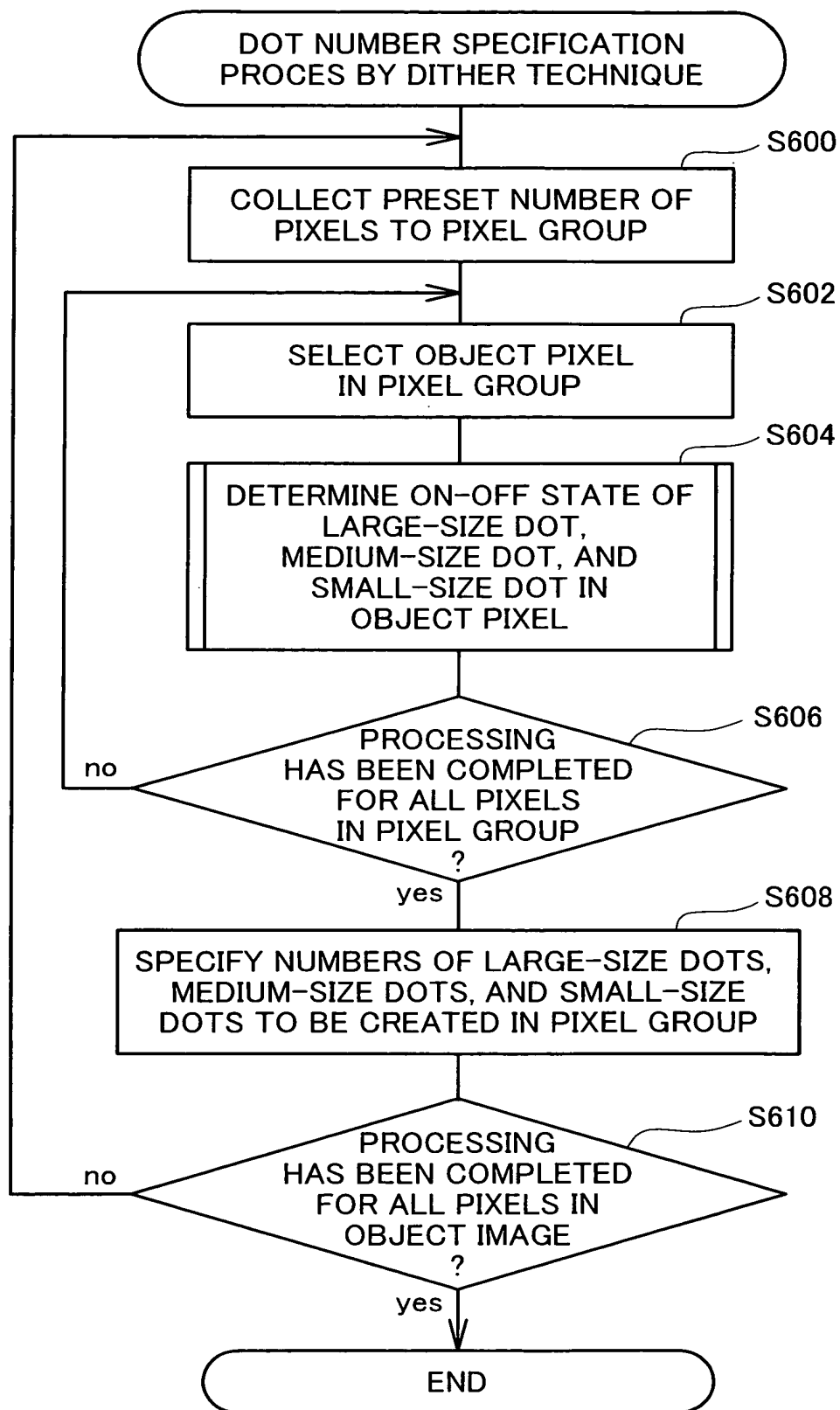


Fig.22

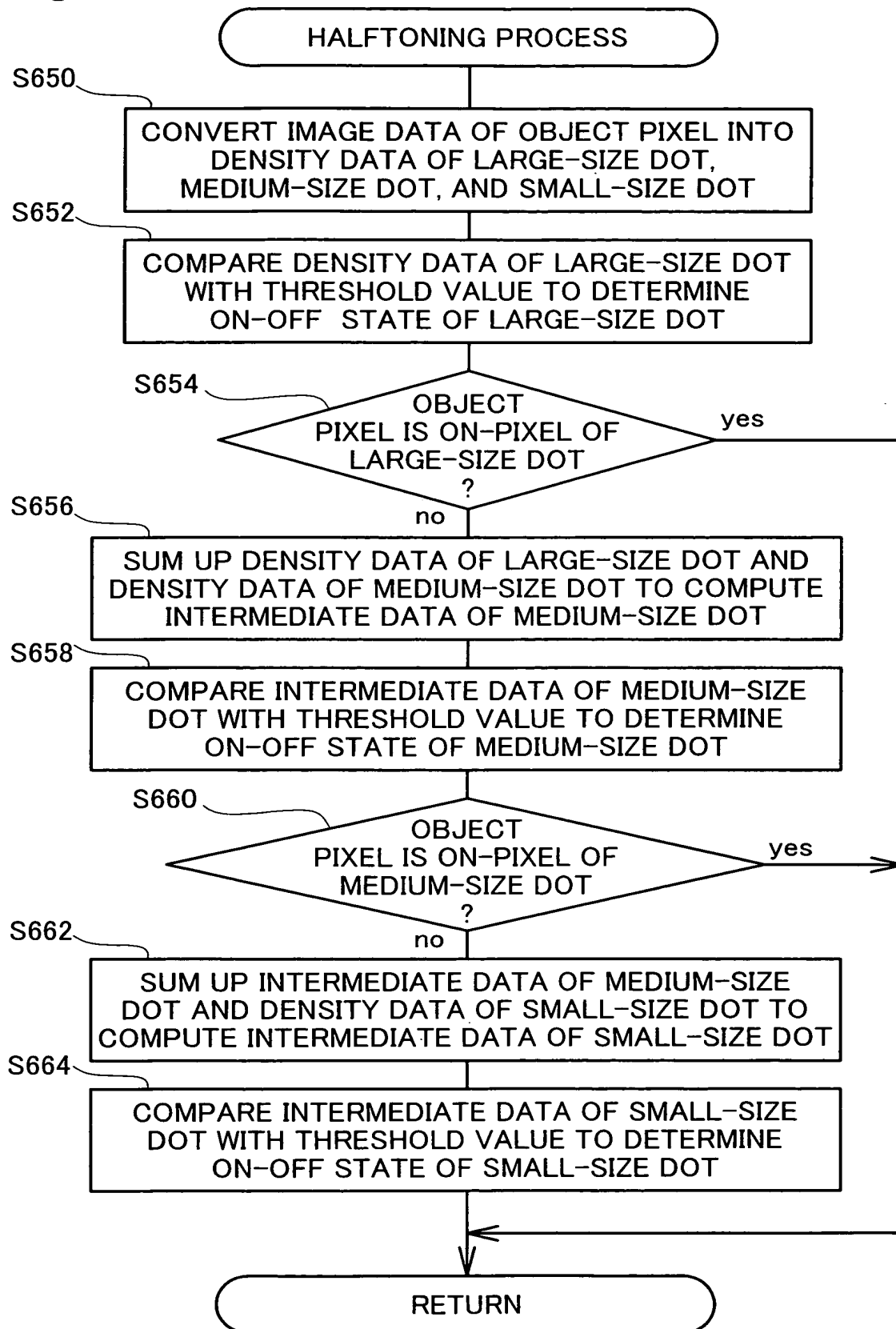


Fig.23

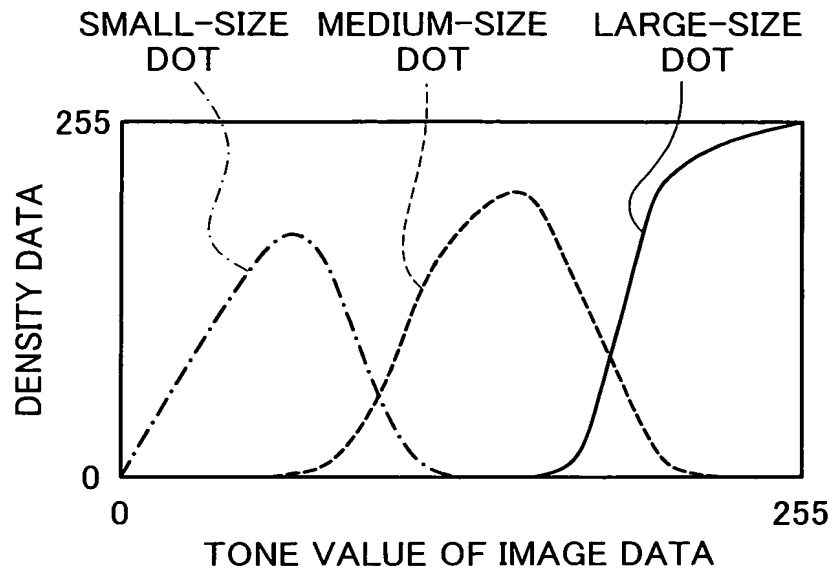


Fig.24

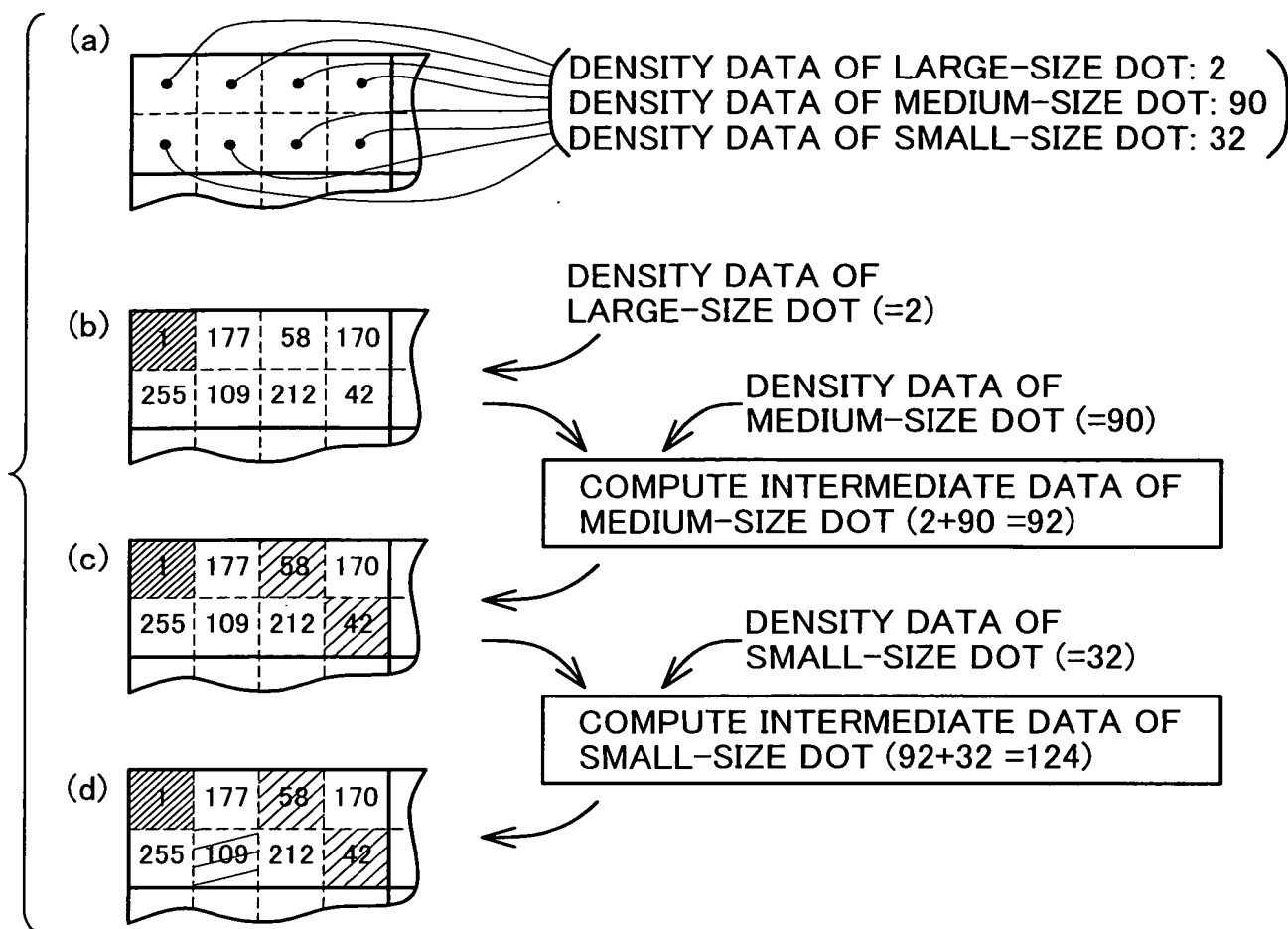


Fig.25

(LARGE, MEDIUM, SMALL) = (1,2,1)	(0,4,0)	(0,3,1)	
(0,3,0)	(0,2,1)	(1,1,0)	
(0,2,3)	(1,2,1)	(0,3,0)	

Fig.26

NUMBERS OF DOTS			ENCODED DOT NUMBER DATA
LARGE-SIZE DOT	MEDIUM-SIZE DOT	SMALL-SIZE DOT	
0	0	0	0
0	0	1	1
0	0	2	2
0	0	3	3
6	2	0	160
7	0	0	161
7	0	1	162
7	1	0	163
8	0	0	164

Fig.27

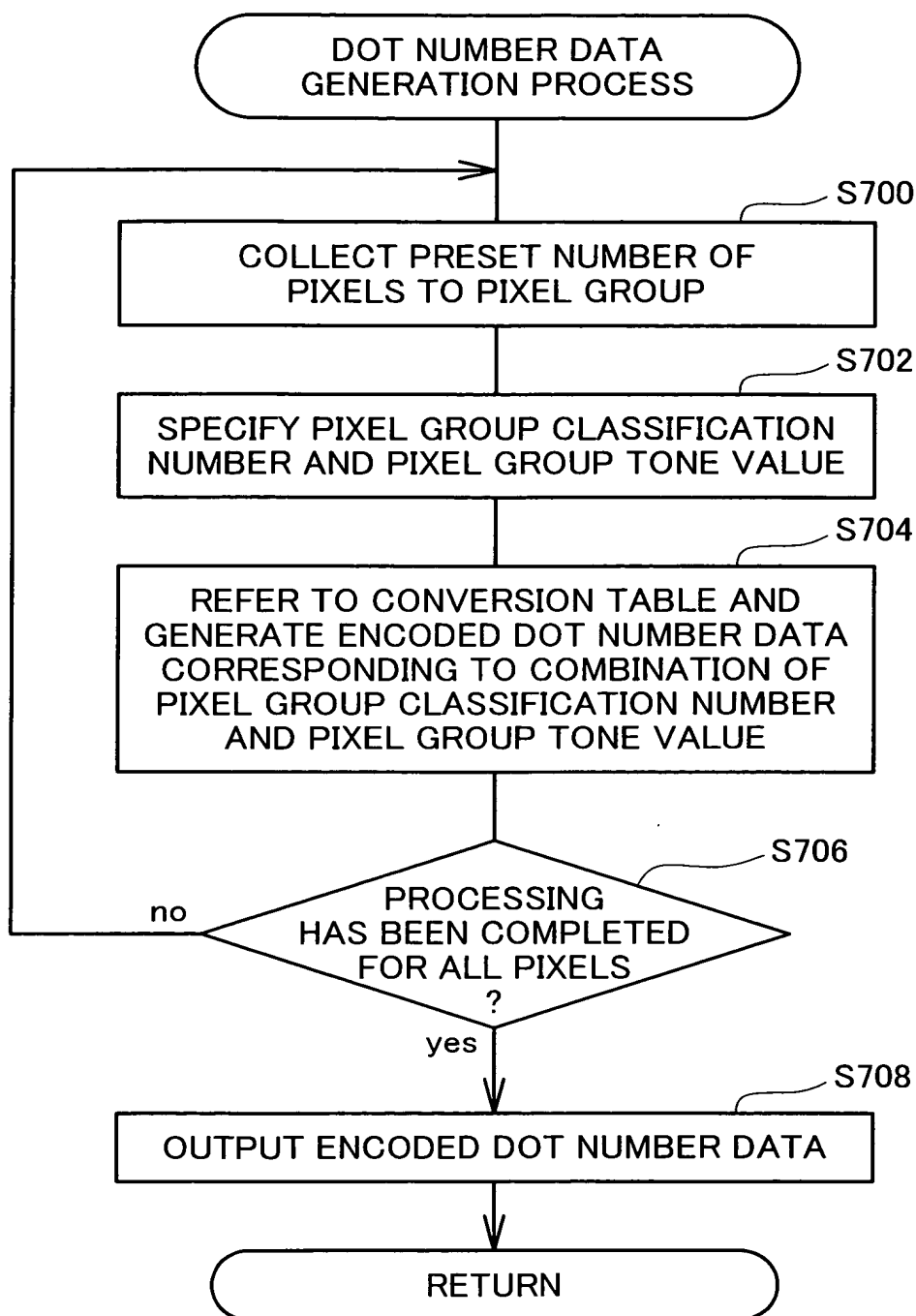


Fig.28

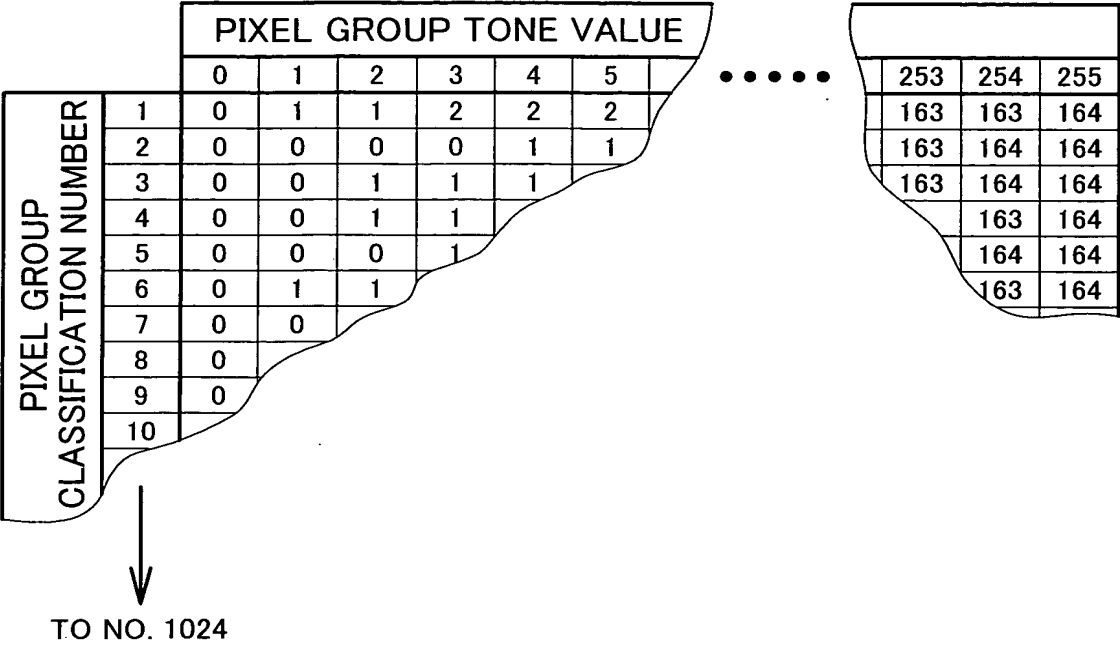


Fig.29

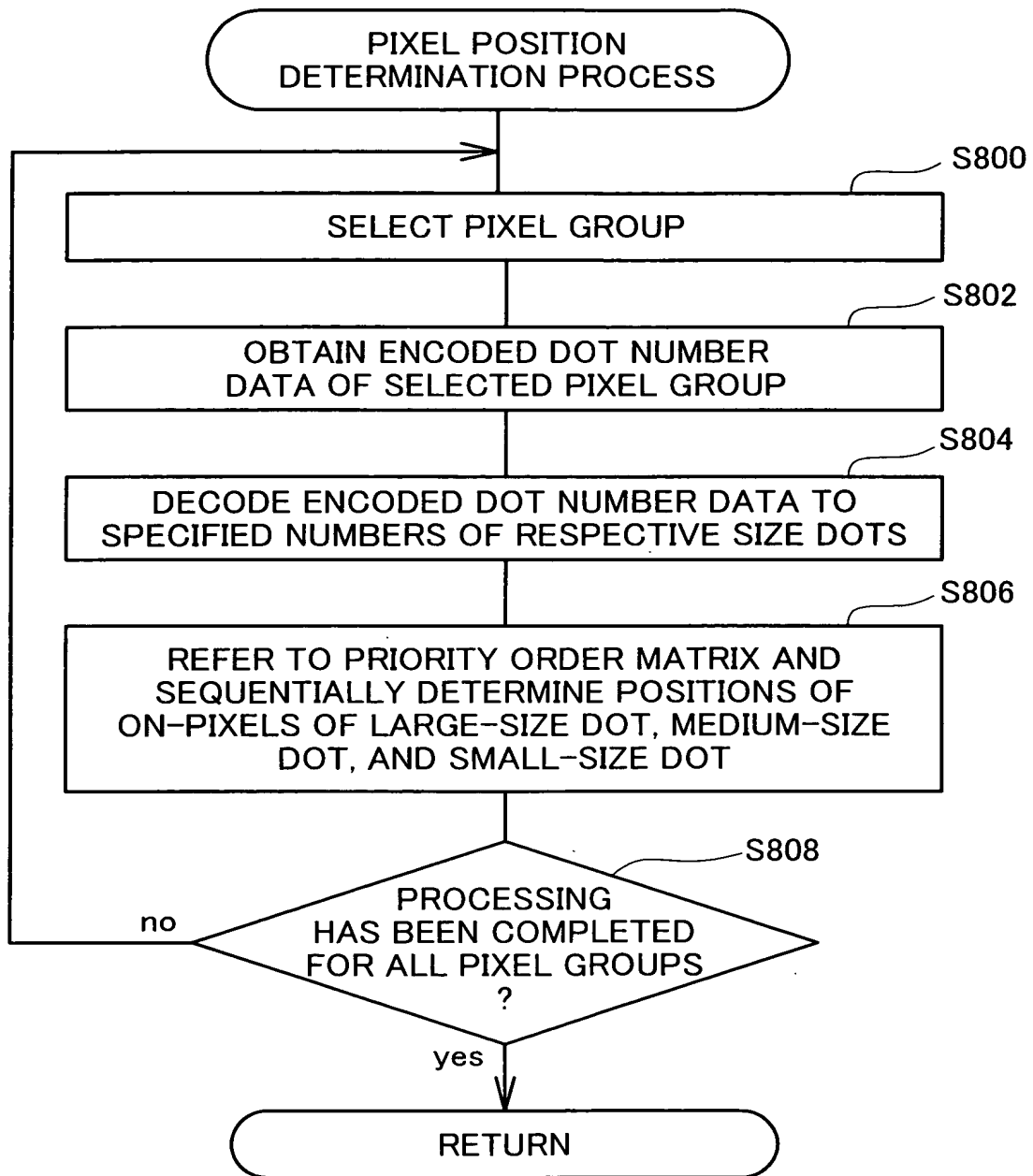


Fig.30

ENCODED DOT NUMBER DATA	NUMBERS OF DOTS		
	LARGE-SIZE DOT	MEDIUM-SIZE DOT	SMALL-SIZE DOT
0	0	0	0
1	0	0	1
2	0	0	2
3	0	0	3
160	6	2	0
161	7	0	0
162	7	0	1
163	7	1	0
164	8	0	0

Fig.31

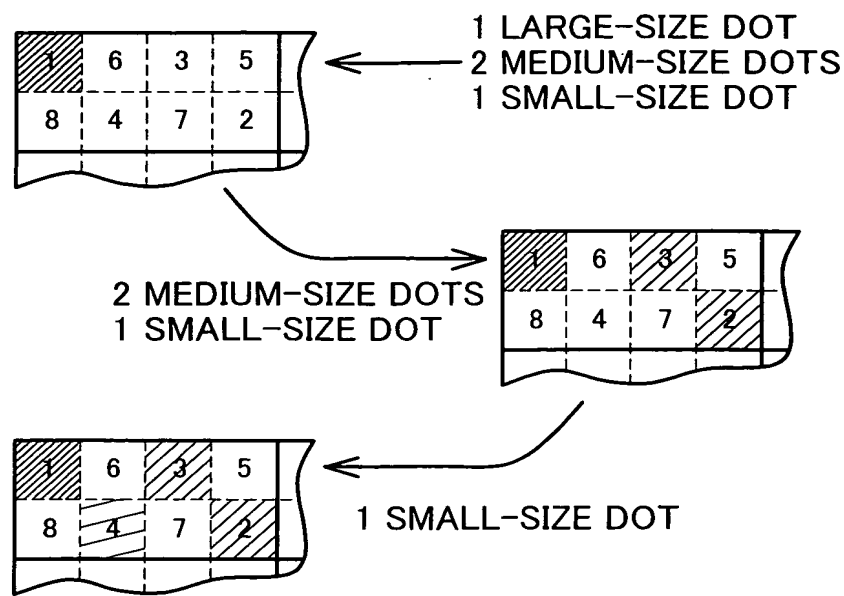


Fig.32

ENCODED DOT NUMBER DATA	NUMBERS OF DOTS		
	LARGE-SIZE DOT	LARGE-SIZE DOT + MEDIUM-SIZE DOT	LARGE-SIZE DOT + MEDIUM-SIZE DOT + SMALL-SIZE DOT
0	0	0	0
1	0	0	1
2	0	0	2
3	0	0	3
160	6	8	8
161	7	7	7
162	7	7	8
163	7	8	8
164	8	8	8

Fig.33

SIZE OF DITHER MATRIX		SIZE OF PIXEL GROUP (PIXELS)		BLOCK NUMBER	DATA VOLUME OF CONVERSION TABLE (BYTES)	NUMBER OF STATES / PIXEL GROUP	NUMBER OF USED BITS	DATA COMPRESSION RATE
MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION	MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION					
64	64	2	2	1024	256K	35	6	0.75
		4	2	512	128K	165	8	0.5
		4	4	256	128K	969	10	0.31
128	64	2	2	2048	512K	35	6	0.75
		4	2	1024	256K	165	8	0.5
		4	4	512	256K	969	10	0.31
128	128	2	2	4096	1024K	35	6	0.75
		4	2	2048	512K	165	8	0.5
		4	4	1024	512K	969	10	0.31

Fig.34

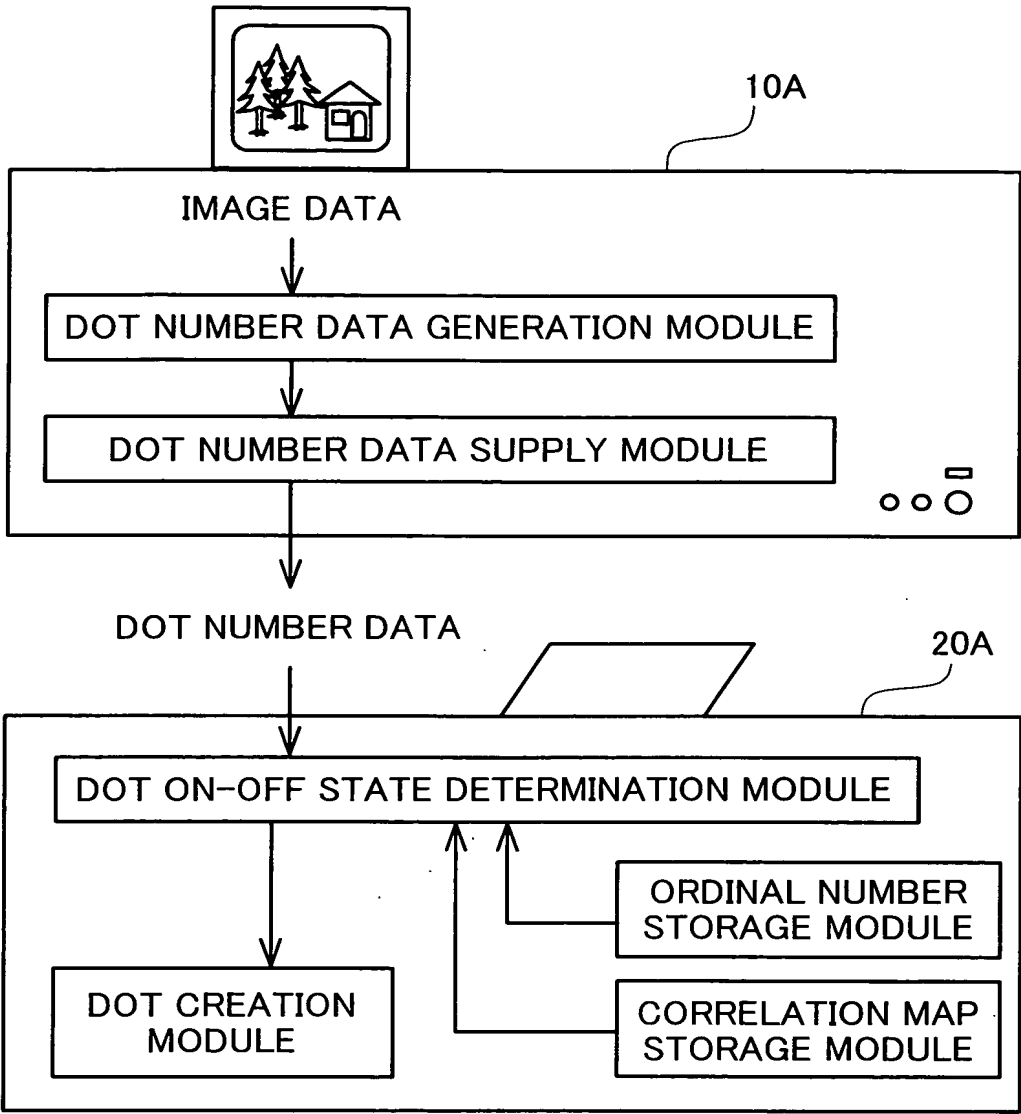


Fig.35

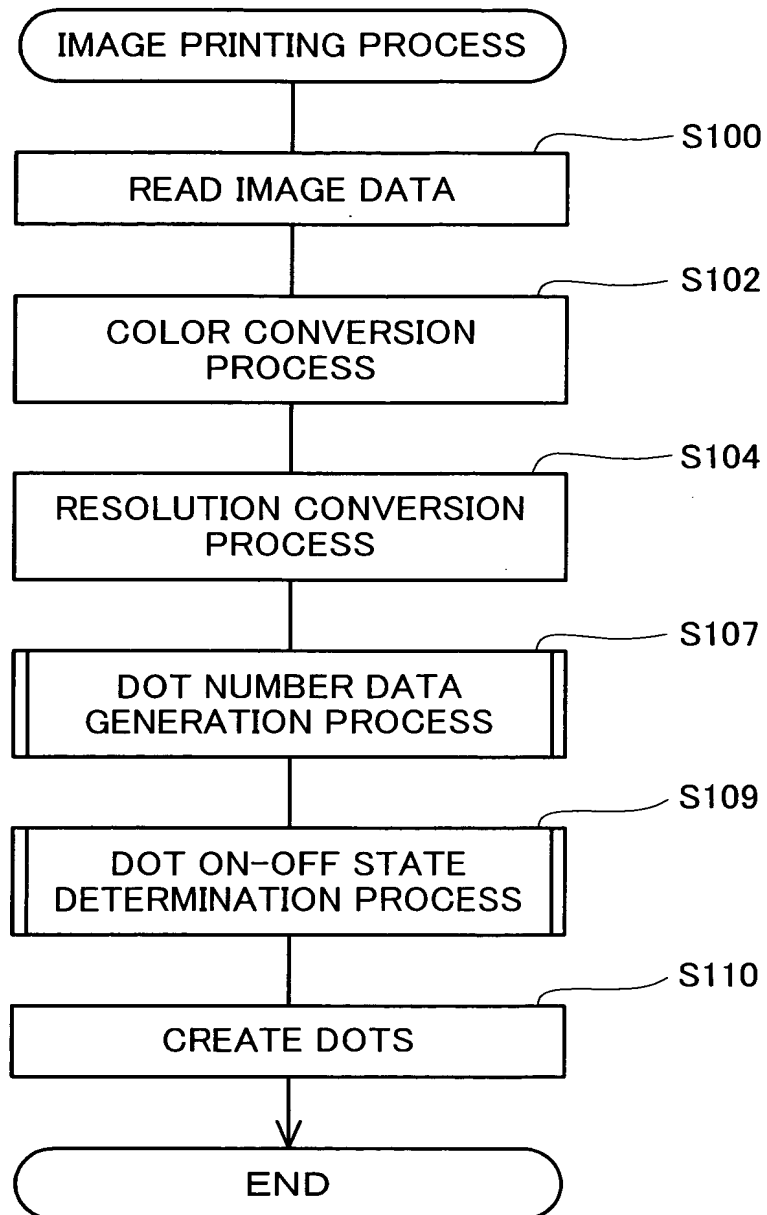


Fig.36

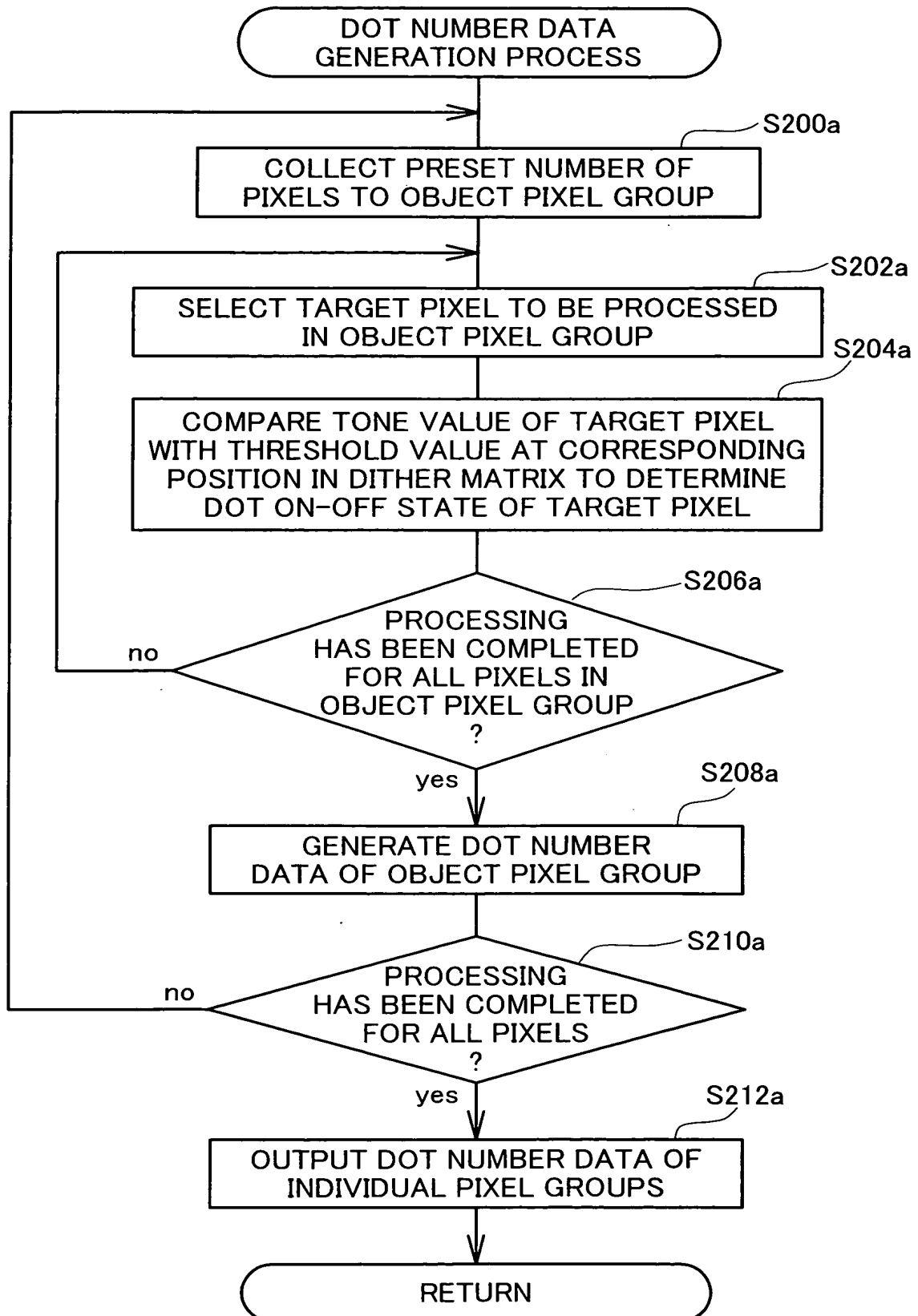


Fig.37

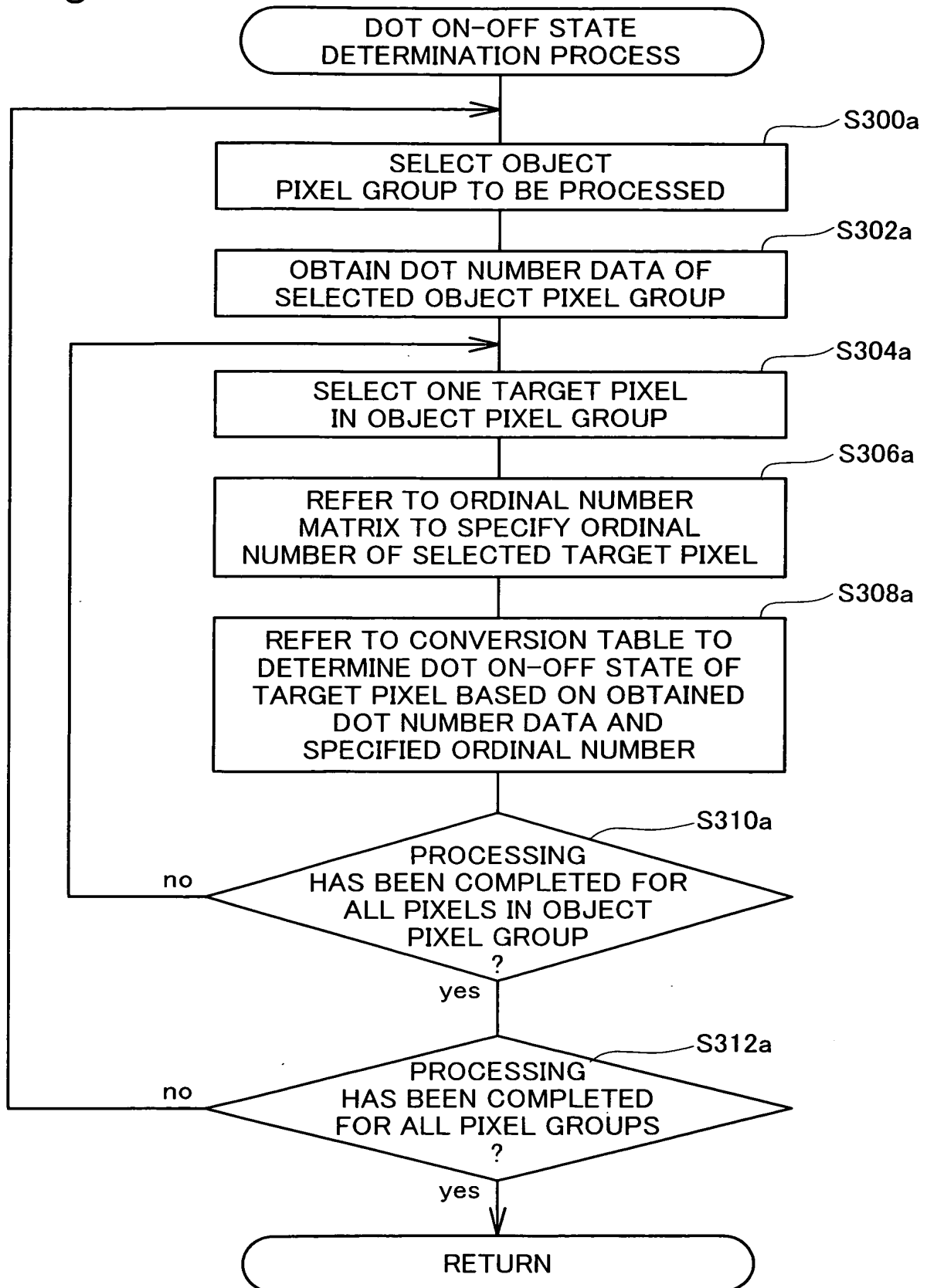


Fig.38a

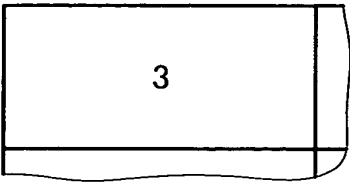


Fig.38b

1	6	3	5
8	4	7	2

Fig.38c

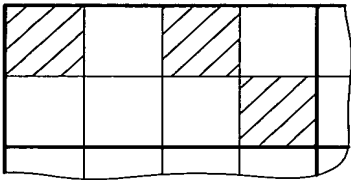
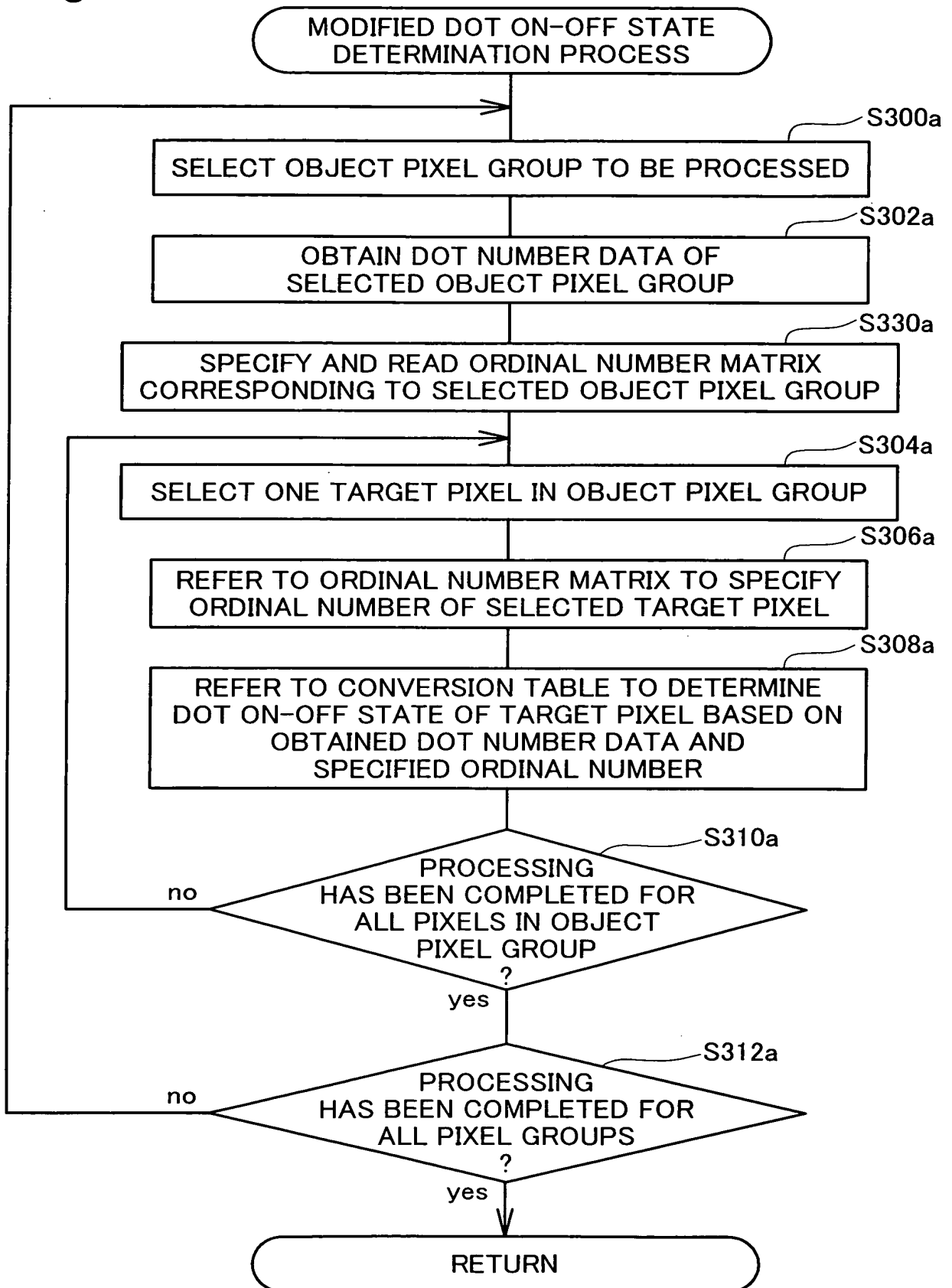


Fig.40



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Fig.42a

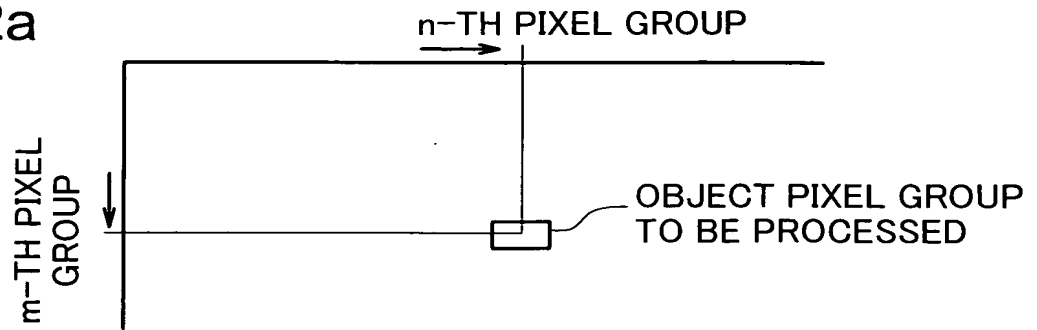


Fig.42b

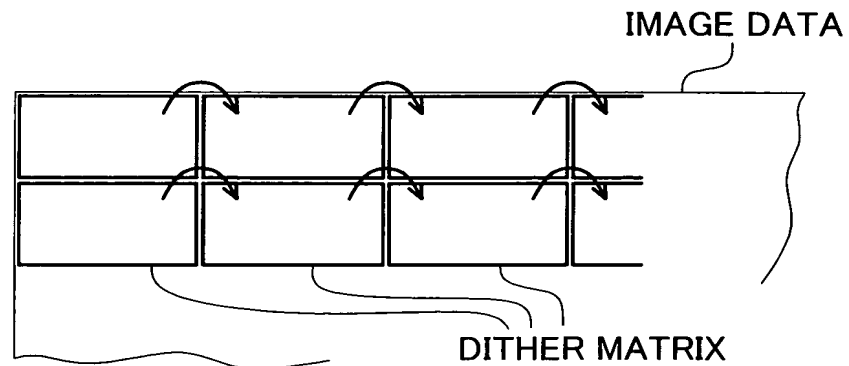


Fig.42c

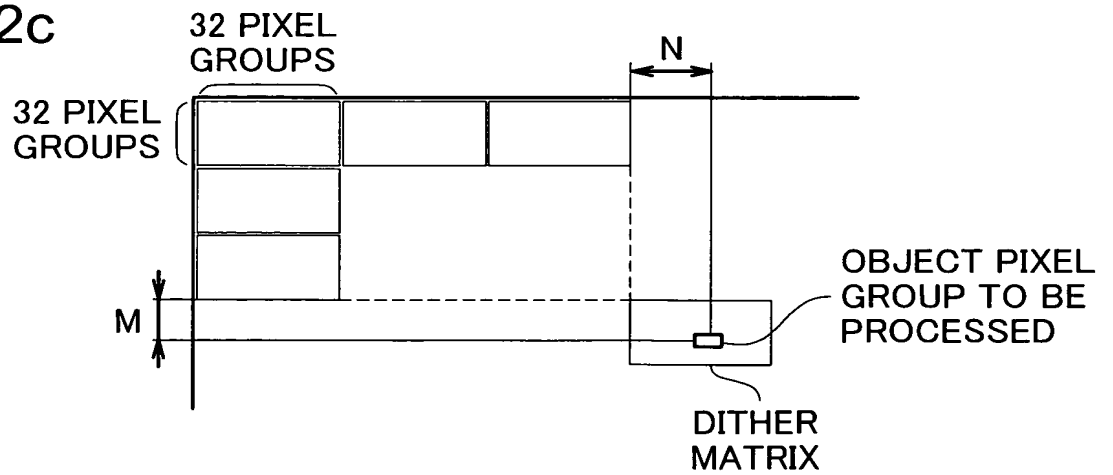


Fig.42d

$$\begin{cases} N = n - \text{int}(n/32) \times 32 \\ M = m - \text{int}(m/32) \times 32 \end{cases}$$

Fig.43



Fig.44

SIZE OF DITHER MATRIX (PIXELS)		SIZE OF PIXEL GROUP (PIXELS)		NUMBER OF DIFFERENT ORDINAL NUMBER MATRIXES	DATA SIZE OF EACH ORDINAL NUMBER MATRIX (BYTES)	REQUIRED MEMORY CAPACITY (KILOBYTES)
MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION	MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION			
64	64	2	2	1024	1	1
		4	2	512	3	1.5
		4	4	256	8	2
128	64	2	2	2048	1	2
		4	2	1024	3	3
		4	4	512	8	4
128	128	2	2	4096	1	4
		4	2	2048	3	6
		4	4	1024	8	8

Fig.45

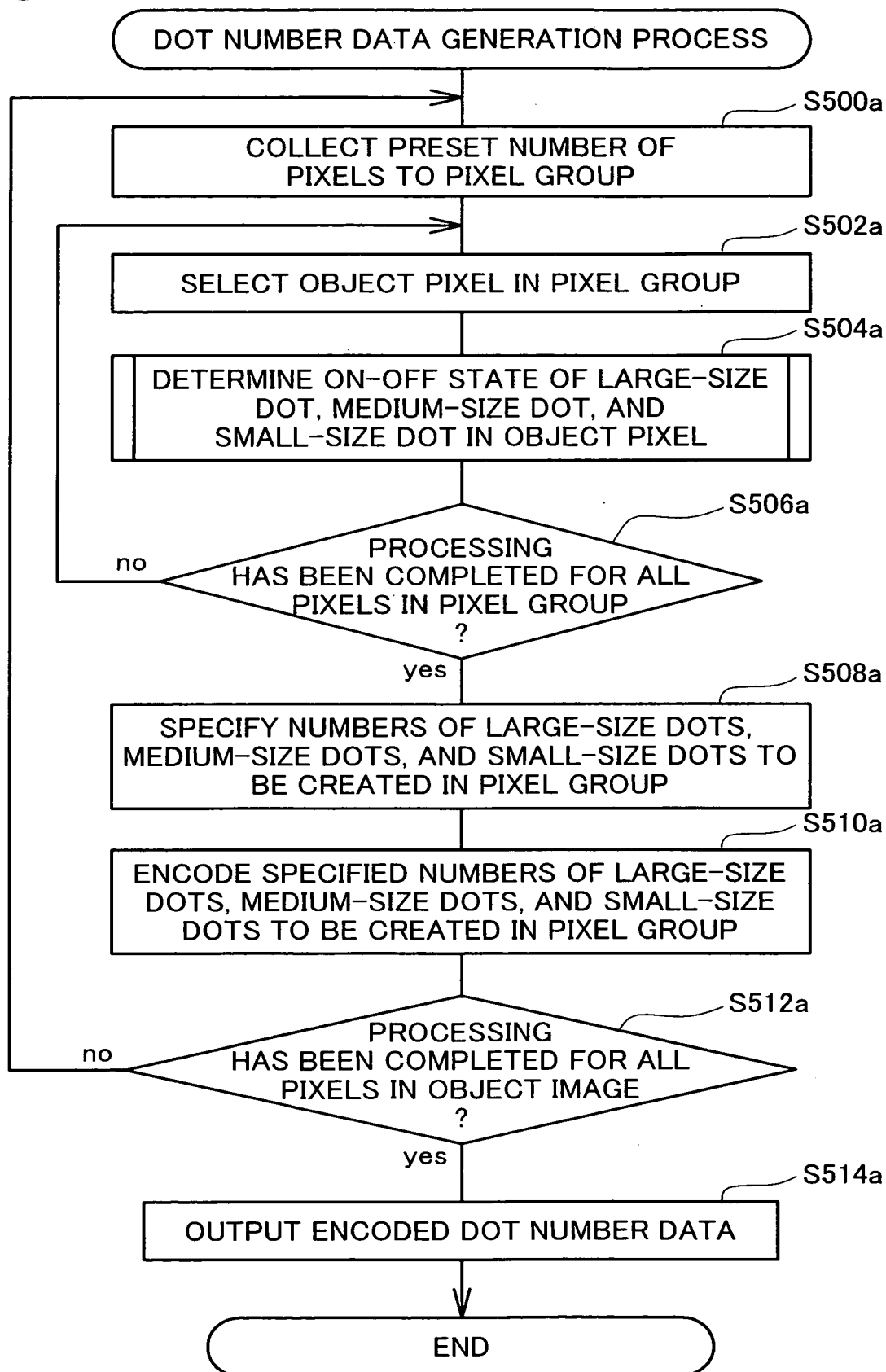


Fig.46

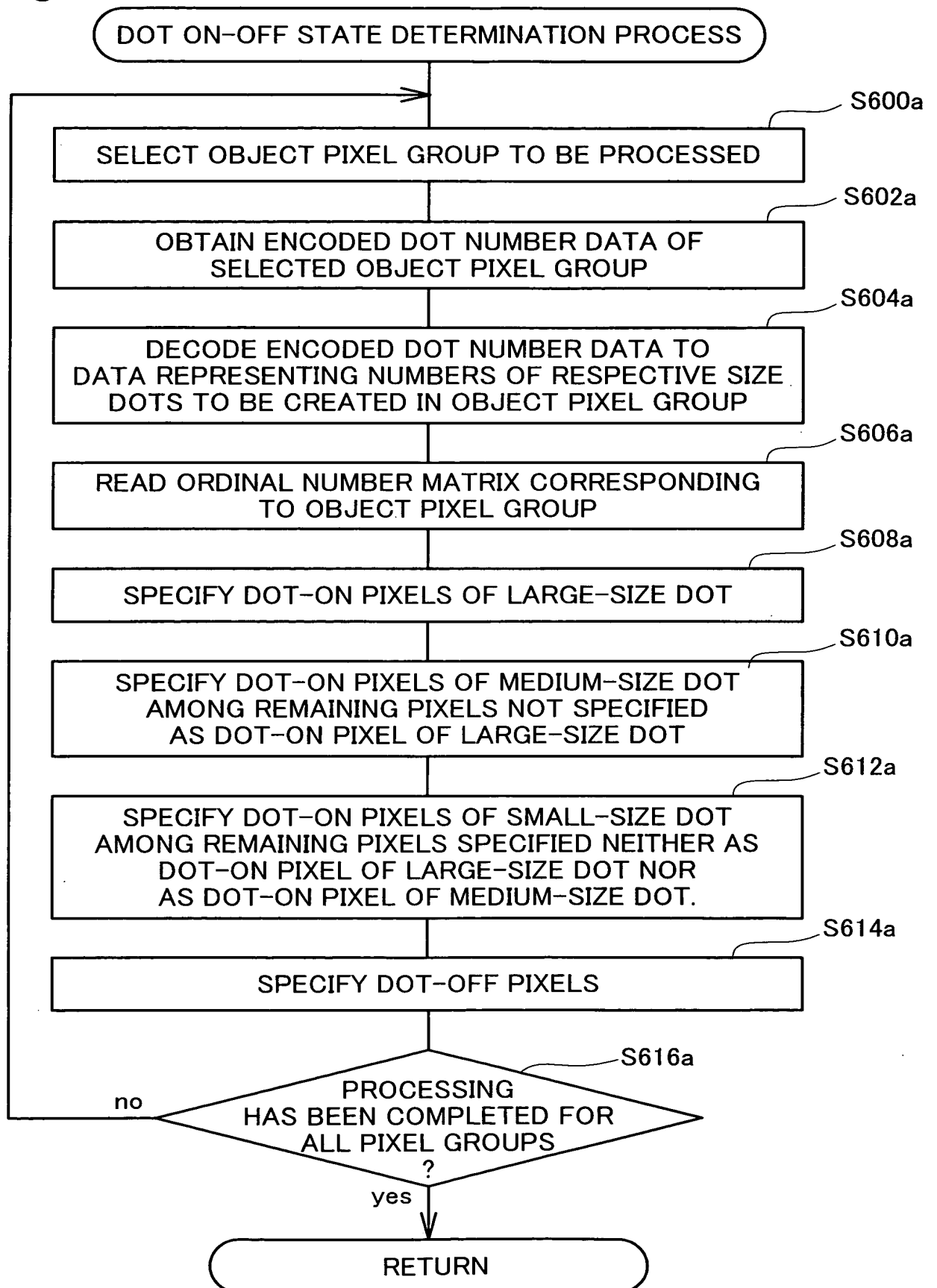


Fig.47

		DOT NUMBER DATA										
		0	1	2	3	4	5	6	7	162	163	164
ORDINAL NUMBER	1	0	1	1	1	1	1	1	1	3	3	3
	2	0	0	1	1	1	1	1	1	3	3	
	3	0	0	0	1	1	1			3	3	
	4	0	0	0	0	1	1				3	
	5	0	0	0	0	0						
	6	0	0	0	0	0						
	7	0	0	0	0	0						
	8	0	0	0	0							

Fig.48

SIZE OF PIXEL GROUP (PIXELS)		NUMBER OF DIFFERENT ORDINAL NUMBERS	NUMBER OF ENCODED DOT NUMBER DATA	REQUIRED MEMORY CAPACITY FOR CONVERSION TABLE (KILOBYTES)
MAIN SCANNING DIRECTION	SUB-SCANNING DIRECTION			
2	2	4	35	0.034
4	2	8	165	0.322
4	4	16	969	3.785

Fig.49

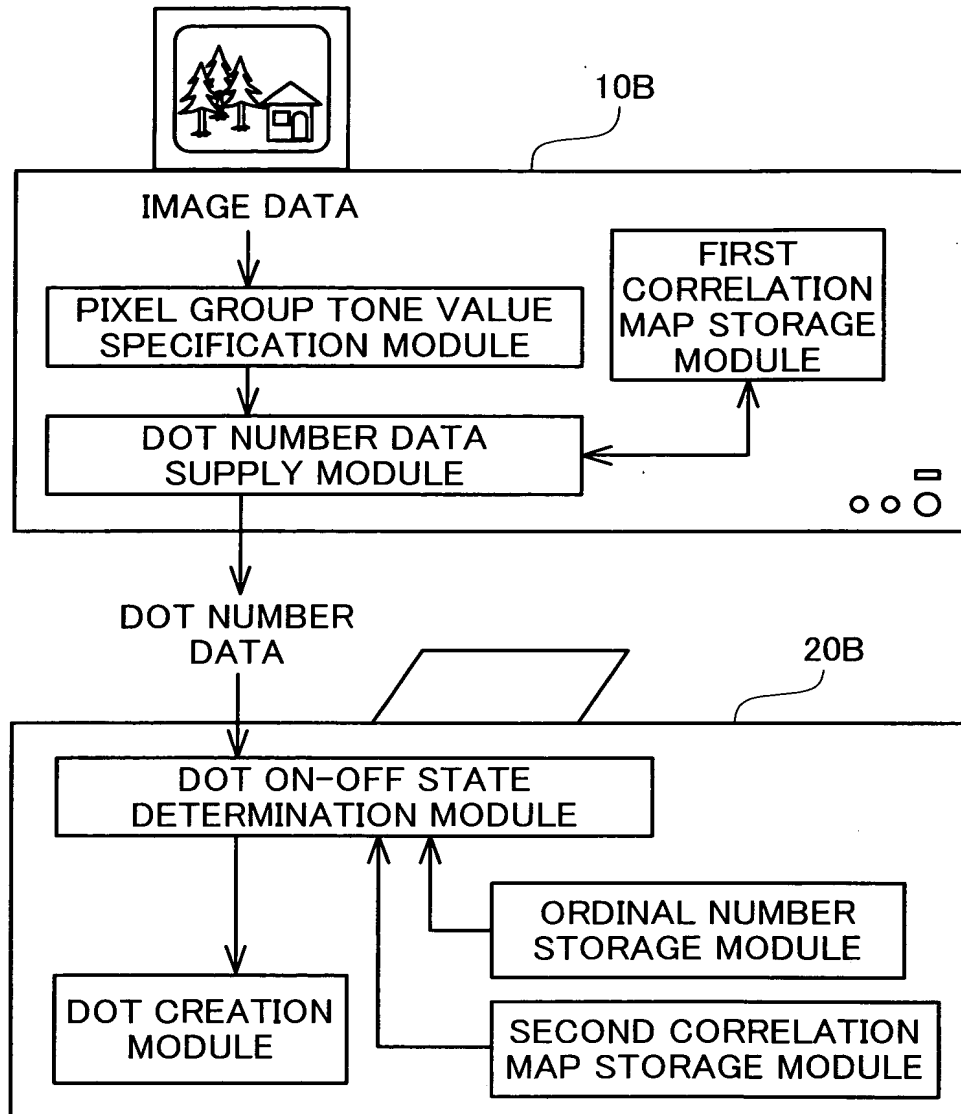


Fig.50

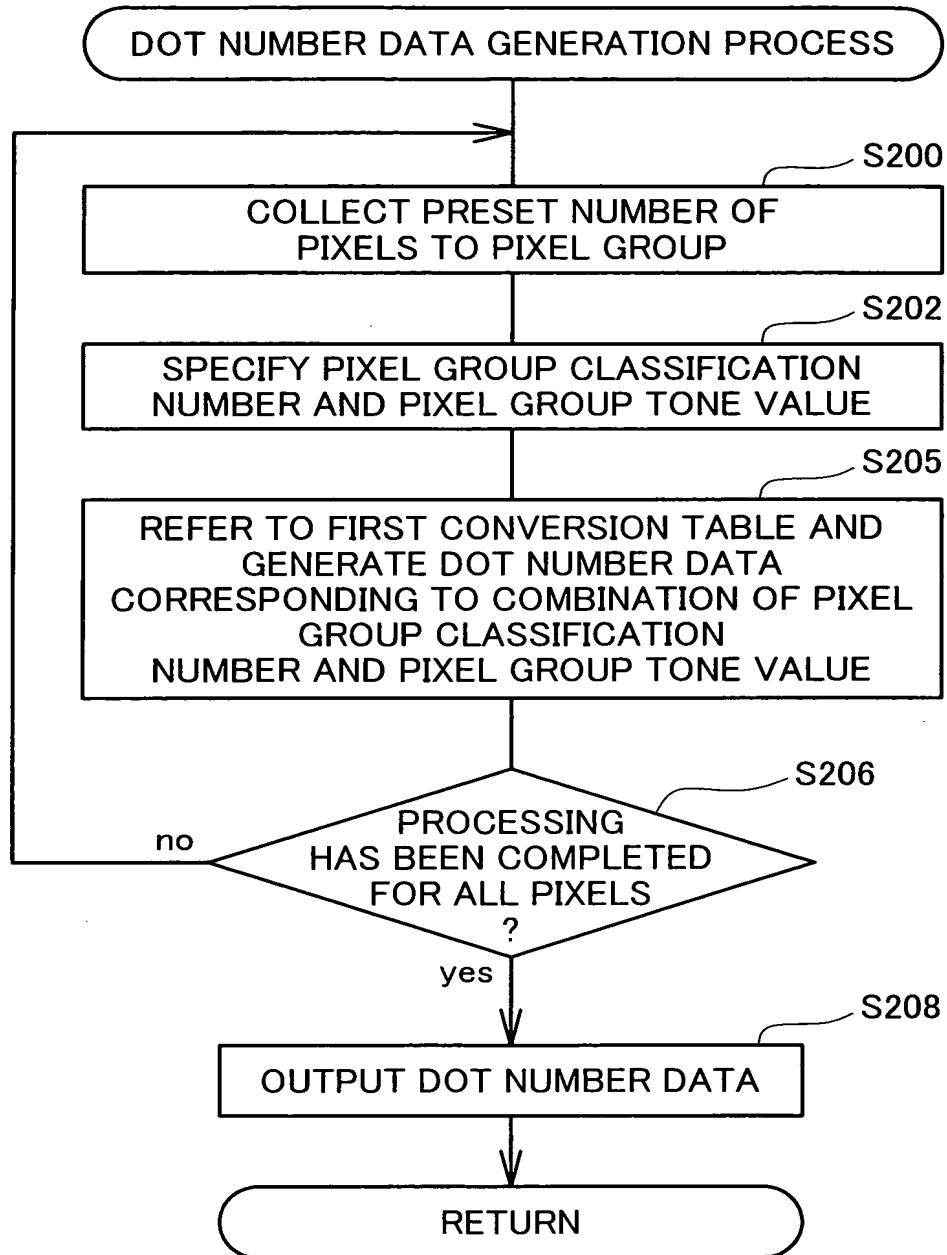


Fig.51

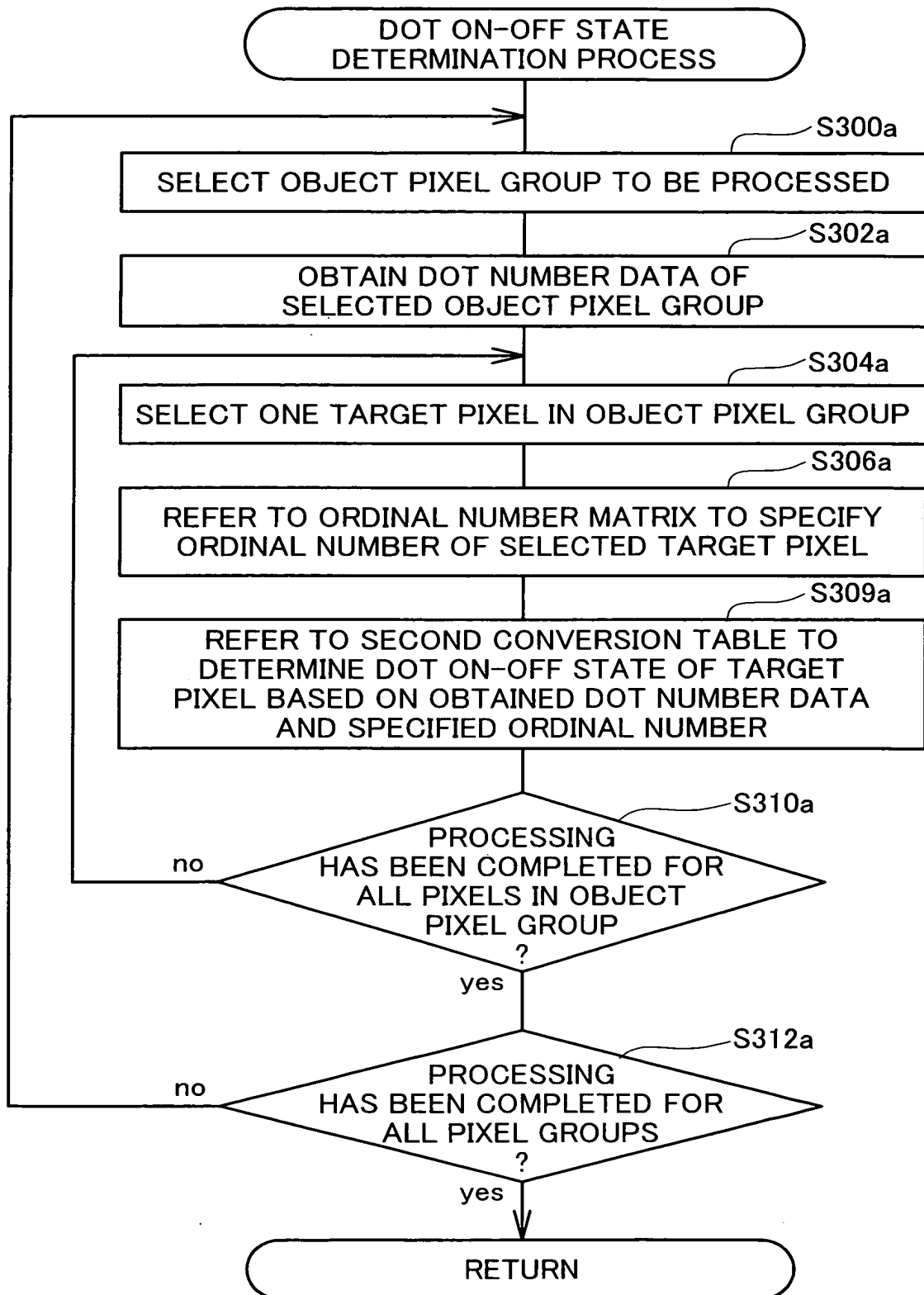


Fig.52

